American

FORESTS

JULY, 1957 50 CENTS

...A HAS A PICNIC—...

...thousands of other school, church, camp and youth groups, the staff of the American Forestry Association had a picnic last month. Host and hostess were Dr. and Mrs. Wilson Compton at their home in Virginia. At left, Vice President Compton, of AFA, runs the potato race as Mrs. Compton watches.

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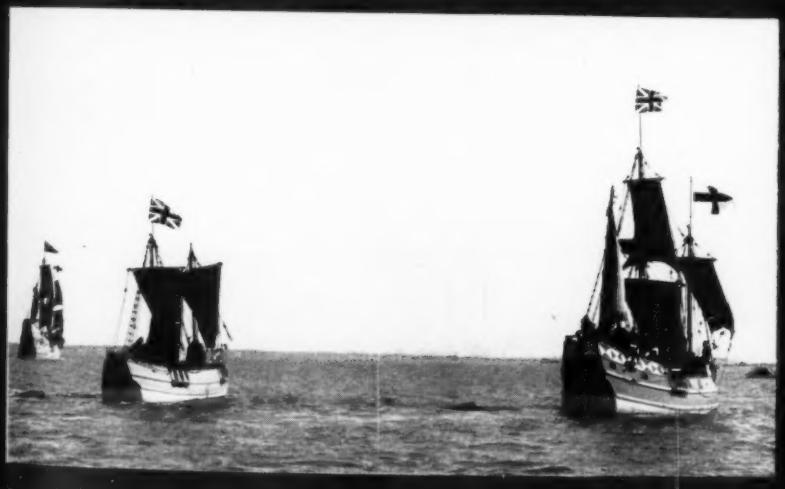

JAMESTOWN, FRAMEWORK OF EMPIRE—...

...like thousands of other Americans, author E. John Long went to the Jamestown Festival last month in Virginia. He found that wood literally provided the framework for the first permanent English-speaking community founded in 1607. At left, the Susan Constant, the Godspeed and the Discovery.

Page 17

...ING A WATERSHED

...up for the Brandywine Valley of Delaware and Pennsylvania folks got together to put their conservation house in order. Their accomplishments could serve as a pilot model for the rest of the nation. Storm of Stirring Brandywine Shop. At left, Farmer Fred Custis tells Forestry Specialist Wiley Appenfeller how...

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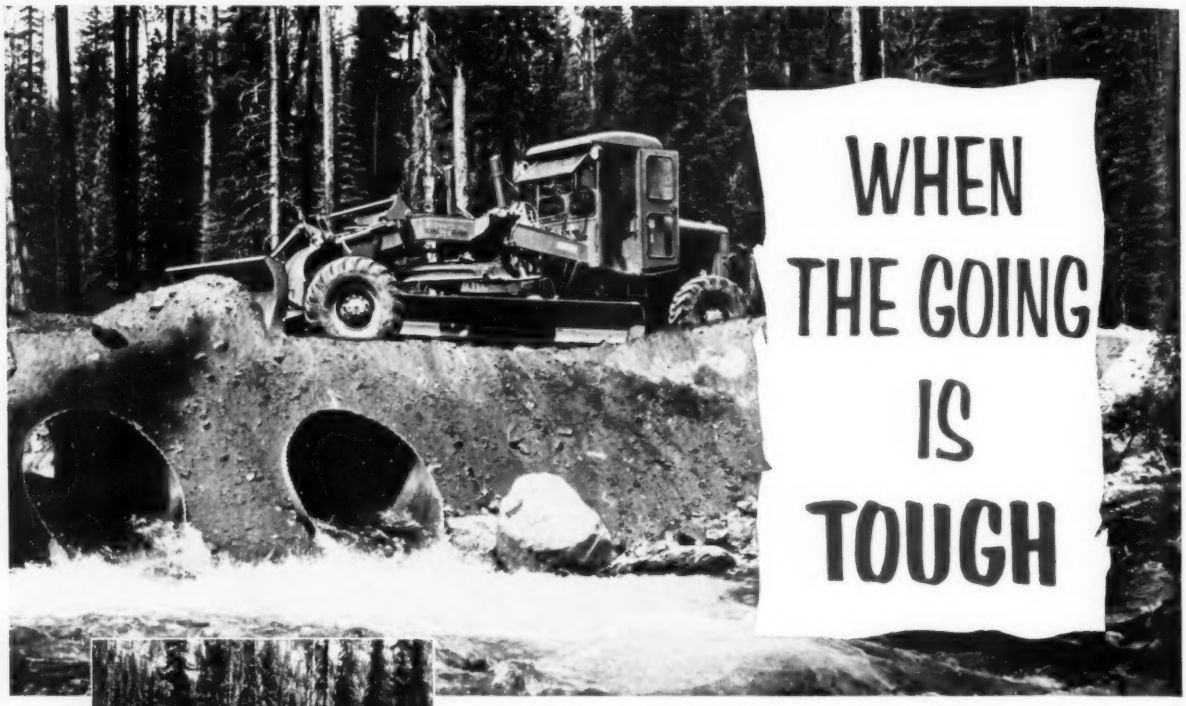

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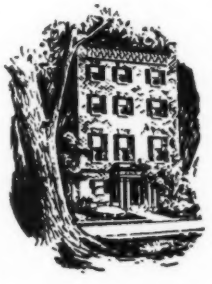

The AFA

The American Forestry Association, publishers of *American Forests*, is a national organization—independent and non-political in character—for the advancement of intelligent management and use of forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is to create an enlightened public appreciation of these resources and the part they play in the social and economic life of the nation. Created in 1875, it is the oldest national forest conservation organization in America.

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Forest Forum

Poll of Members Urged

EDITOR:

In the March issue of AMERICAN FORESTS your editorial "Will Price Reporting Work" kindly offers an opportunity for me to state the case for S. 840, my bill proposing to establish price reporting for forest products. Let me say at the outset that I was quite surprised by the decision of your Board of Directors to oppose this measure as I was the Wilderness Bill—prior to seeking any expression from your membership. But since you have said, "Let's open the book and let people decide for themselves," I am happy to have this opportunity which you have extended to me.

Let me make it clear that I am not pressing for "uniform" price reporting as your editorial states. In the case of timber stumpage most people know that each tract of timber can be priced only with due account of location, size, and quality. There is no such thing as uniformity here, but knowledge of individual transactions would be helpful to forest owners. Nor is this possible with the hundreds of other commodities which are reported upon daily. Due account must be taken of grades and other quality considerations—but they cannot be taken into account in forestry until we make a start! Why should producers of forest products be penalized by not having current marketing data when every other commodity group has such information? Can the lack of market information be one of the reasons why sound forestry is such a problem on small holdings?

In two recent studies just published by Penn State and the Northeastern Regional Technical Committee of the Agricultural Experiment Stations, two-thirds of the small owners sold their timber without any presale knowledge of markets, prices, or volume of timber they had to sell! Only 7.2% of the owners consciously practiced forestry. And two-thirds had only the buyer's scale of volume.

I can hardly believe that you or your board will agree that keeping forest owners in ignorance is going to lead to better forestry. Yet by resisting efforts to obtain price reporting that is the effect. Can you suggest any other industry where such an unhealthy situation exists?

It is strange to me that the first opposition to my proposal was on the grounds that it would lead to parity *supports*. We took all reference to parity calculations out of the bill (supports were never included) and the opponents shifted their ground to outright opposition to *reports!* Opponents are now telling forest owners that the best source of price information is from the buyers themselves. Do paper mills or lumber companies sell their products on customer offers or do they name their price?

How do you know that forest products price reporting is unworkable until it is tried? Isn't it better to try it out and find the "bugs" than to say it will not work? And perhaps you could inform your readers why practically all of the resistance to price reporting comes from the industry which buys the product and practically none from the independent growers and producers of forest products? It would be interesting if you would poll your readers on the basis of which group they belonged to. We might both be surprised but I am willing to take the chance, are you?

Thank you again for permitting me this opportunity.

Hubert H. Humphrey
United States Senator
Minnesota

(After reading Senator Humphrey's comment, members might wish to read Mr. Mosebrook's article "A Marketing Information Primer for Woodlot Owners" in the May issue that contained a state-by-state resume of marketing aids available to woodland owners. All of us are well aware, of course, of the importance of enlisting more owners under the good management banner and in this connection it seemed to us that the McCulloch Chain Saw Company did a good thing. It purchased 100,000 reprints of the Mosebrook article for distribution to woodland owners.

As far as we know, AFA is actually one of the few associations that actually does poll its membership periodically on questions of broad policy and the AFA's program of action. Our board is the group elected by our members to carry out policies adopted. *American Forests* is the sounding board provided where members may comment individually on our activities. To date, we have had very little comment on the Price Reporting Bill one way or the other but we have had a great deal on the Wilderness Bill. Initially, most of the comment was opposed to AFA's action. It then leveled off and today our board's action is supported by a ratio of two to one, and some of the members who originally opposed our action have now changed their minds. This growing opposition to the bill, we find, is not due particularly to anything we have done but due to the fact that the professionals in the key agencies involved do not want this bill. The question, then, as we see it, is, "Are we going to listen to our professionals or are we going to listen to a group of interested laymen?" The professionals get AFA's vote.—Editor)

EDITOR:

It is noted that the Board of The American Forestry Association has taken a position in opposition to the Wilderness Bill, and the Forest Products Price Reporting Bill, both by Senator Humphrey of Minnesota; no doubt it will oppose Senator Stennis' bill making long-term, forest credit available to small forest owners.

In view of silent approval given the stockmen's land grab bill and the Ellsworth stumps-for-timber bill by the AFA, I wonder more and more about which side you are on—the small forest owner or the big timber companies.

Isn't it about time that you reviewed your position on some of these matters and come up with the right answers once in a while? You know full well that the Forest Service couldn't save the wilderness areas two minutes if an Administration were elected with the commitment to brush aside the administrative regulations which created them.

Are you aware of two studies in the Northeast that show that two-thirds of the small forest owners sell their forest products without knowledge as to volume, market and price conditions or available forestry assistance? Can't you see that Senator Humphrey's bills on both these matters are sound public policy? Why not ask your members how they feel?

Ferdinand Hotz
33 E. Washington St.
Chicago, Ill.

(When history is written 100 years hence it will record that AFA's record in opposing unreasonable demands of grazing special interests and other special interests tops all the rest.—Editor)

Chief Forester Praised

EDITOR:

I have just finished reading the article on Indian policies in AMERICAN FORESTS for May.

I think you have done a wonderfully fine job in summarizing about three centuries of Indian administration. I hope the article will be thoughtfully read by thousands and that it may contribute to conservative future administration.

I appreciate your acknowledgment of having read *A Continent Lost—A Civilization Won*. That book was prepared for the perusal of Americans who were too busy to read a lot of books to get a birds-eye view of the history of Indian affairs in America. I believe too few have read it and perhaps none with such intense care as yourself. You have pointed out some of the leading facts in this history and the wide circulation of AMERICAN FORESTS should assist in arousing new and sound thinking on the Indian question.

J. P. Kinney
Springfield Center, N.Y.

EDITOR:

I want to congratulate Mr. Pomeroy on his fine presentation on the Humphrey Wilderness Bill which he delivered to the Washington Section of SAF as published in the April edition of AMERICAN FORESTS. Mr. Pomeroy and The American Forestry Association deserve the thanks of the American people for their courageous opposition to this and other special-interest threats to our public lands.

H. R. Glascock, Jr.
District Forester, Eugene
Industrial Forestry Association
Portland 5, Oregon

(*Turn to page* 5)

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"Some selected territories still available."

AN INDIAN TALKS BACK

Mrs. Crawford, a member of the Executive Committee of the Klamath Tribe, is presently in Washington representing some tribal members who want all provisions of Public Law 587 enforced and the Indian lands sold

By MRS. WADE CRAWFORD

Executive Committee Klamath Tribe

THE appeal to reason is the best weapon against the war of bombs and saber jets, and the war of propaganda.

Caustic, scurrilous word pictures have been drawn about the Klamath Indians of Oregon, in the January and February issues of AMERICAN FORESTS magazine. Such articles have laid these people low in the concept of American public opinion, likening them to "aboriginal head hunters in the Fly River Area of New Guinea."

Who are these people? What is their history? Space will not permit a panoramic review of the years covering the more than nine decades, since the ancestors of these people signed a treaty with the government of the United States.

The territory which is the Klamath Reservation was the home of the original Klamath people who called themselves, "Auks-ni"—People of the Lakes. Ku-muc-ums, (the Indian way of saying K'múkamtch) the Great Spirit had created all things: the earth, the sky, mountains, rivers, lakes, fish, fowl, animals, and the Indian people. When the white man came he was welcomed by them. Had not Ku-muc-ums created the stranger also?

In the changing events, during the gold rush days of California, 1849, Modoc Indians were relocated by the military personnel upon a part of the Klamath land. A small band of Piutes had been granted sanctuary by the Klamaths with the understanding that they would confine themselves to the portion of the land assigned to them. These, and the slaves of the Klamaths, were the people living on the land when the treaty was agreed to.

On October 14, in the year 1864, the treaty was signed between the Klamath Indians including the tribes named above, and the government of the United States. This treaty was ratified by the United States Senate, July 2, 1866—proclaimed February 17, 1870. The trust period of the government over these lands and peoples was for twenty years, and the provisions as outlined were education and vocational training to enable the Indians to live successfully with their white neighbors. It was a peaceful treaty, entered into in good faith by the Indian chiefs and presumably, in like vein by the representatives of the government. The Klamaths agreed to free their slaves under the Emancipation Proclamation and these people were promised the benefits of the treaty's agreements.

Draft AFA, Chinook Urges

IN a statement before the Senate Banking and Currency Committee, Miss Betsy Ann Trick, Secretary, Chinook Tribe, Inc., recommended that The American Forestry Association and the University of Washington be called upon to review present Indian land policies and to assist in working out plans for maximum conservation of Indian forests.

"Unless a cooperative and long-range constructive program can be set up," Miss Trick said, "the timber, the land and the potential livelihood of our forests will be lost to the Indian people."

That the Klamath Indians successfully met the social and economic change in their mode of life, and faithfully fulfilled their part of the treaty agreement with the government, will be found in the superintendents' reports to the Commissioner of Indian Affairs of that day. A specific report from Superintendent David Wade Matthews in 1894 states:

"These Indians deserve a good deal of consideration from the government because of the manner in which they have fulfilled their part of the agreement. They live in their modern homes with their well tilled fields surrounding them and their herds of horses and cattle."

In the latter part of the nineteenth century, about 1890, the Klamath and Modoc Indians began negotiations with the government for a "final settlement." The twenty-year trust period had expired and year after year since then, the Indians sent delegates to Washington in the vain attempt to wind up their affairs with the government and become full citizens of this country.

Volume upon volume of printed testimony of Indian witnesses, reports of Congressional hearings and investigations are stacked knee-deep in the attics of the Senate and House Office Buildings. Mute evidence of the Indian struggle to overcome bureaucracy and its blighting influence cry out from the past in denunciation of the accusation that these people ever were "head hunters."

Of the 2118 descendants of the Klamath people, Modocs and others — who presently own the Klamath Reservation in equity under P.L. 587—1166 are minors; 390 are full bloods. The remainder includes blood degrees of one-half, one-quarter, one-eighth and one-sixteenth. The nationalities are English,

(*Turn to page* 48)

Forest Forum

(*From page 2*)

Strength in Unity

EDITOR:

Your quote of Dr. Gabrielson on page 11 of the May issue prompts me to write this letter.

I agree that the idea of *unity* of resources is the most important single concept in resource conservation. I took special pains to emphasize the idea in my book, *Conserving American Resources*, Prentice-Hall, 1956; in fact, I devoted one entire chapter to the idea, and recalled it in numerous contexts throughout the book.

Ruben L. Parson, Chairman
Geography-Geology Dept.
East Tennessee State College
Johnson City, Tennessee

A Good Idea

EDITOR:

My own numbers of AMERICAN FORESTS—not only the career issue but every issue—go to the library of our local high school each month when I am through with them. Our librarian was very appreciative when I first suggested this a year or so ago—being used in Readers Guide enhances its value for students she tells me.

Arthur H. Folger
Healdsburg, Calif.

Forestry in Action

EDITOR:

I have read Mr. Rosecrans' article in the May issue of AMERICAN FORESTS magazine entitled "Logging in Recreational Forests." I found the article unusually interesting for two reasons: (1) the areas in southern California that are mentioned are familiar to me from personal experience while employed with the Forest Service a good many years ago, and (2) the unusual treatment being given the areas and the development of helpful public relations.

The case for logging in recreational forests has been stated very well. I believe this article will serve as a basis for thoughtful consideration of the problem in other parts of the country.

A. Z. Nelson
Forest Economist
National Lumber Manufacturers Assn.
1319 Eighteenth Street, N.W.
Washington 6, D. C.

Hungarian Story

EDITOR:

May I congratulate you on the superb story "Flight to Freedom" in the May issue of AMERICAN FORESTS. This story was covered by a number of important national U. S. magazines. To my mind, none of them did as effective or sympathetic job as your publication. All of us here at Powell River are delighted. We have all become convinced that this group of highly-trained Hungarian scientists and foresters will make an important contribution to good forestry on this continent.

F. H. McNeil
Powell River Co., Ltd.
Vancouver, B. C.

EDITOR:

. . . Positively a humdinger.

Lowell Besley
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THERE'S NO *atch* TO THIS—

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H. B. Wells, Fire Chief
Newbury, S. C.

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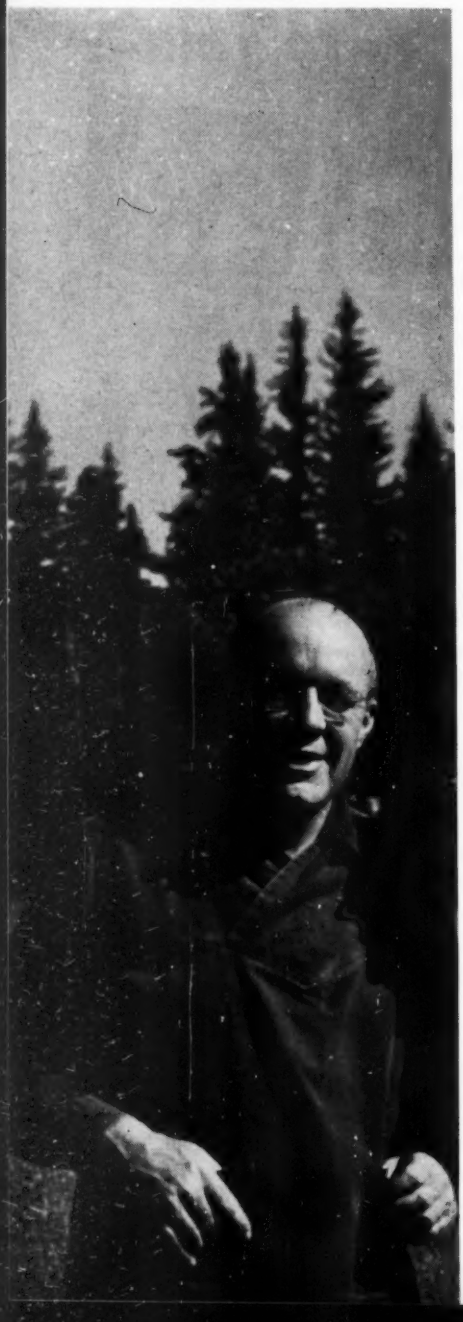
THE WILDERNESS BILL AND FORESTERS

An address by wilderness enthusiast Howard Zahniser before Washington Section, SAF

Howard Zahniser



IT has long been my opinion, and one that I have frequently expressed, that wilderness preservation policies in this country will not be firmly established and secure until those who might wish to make conflicting use of our wilderness areas have joined in developing such policies and, having done so, are satisfied to accept them.

That includes foresters. It most emphatically includes foresters. I can think of no group of people who can be so personally interested in the preservation of primeval forests as are foresters. I can think of no man so deeply concerned as a forester is with having examples of the primeval still living for his children, and theirs, and theirs, on and on, to see and know. Our modern, our current, movement for wilderness preservation was led by foresters, and to a great extent the success of our wilderness preservation efforts now will be determined by foresters.

So, of course, in our deep concern with the development of sound and enduring wilderness preservation policies we are eager to have the understanding and support of foresters and, of greater importance right now, to have their thoughtful criticism and counsel, their — *your* — participation in perfecting a preservation program and in seeing it made effective.

I did not realize, when I first thought carefully about this occasion, that it would take me so long to get to the beginning of my remarks. For I thought I would start right out by saying that I do not come here tonight to quarrel with anyone but rather to try to demonstrate that no quarrel is necessary.

Those whom I represent here tonight, and I myself, have one central idea in trying to develop the concept that is expressed in the wilderness bill. That is the idea that it is possible to fit wilderness preservation into a variety of other land-use programs that are already in existence and to do this in such a way as not to interfere seriously with any other program.

If we have succeeded in this, I am confident that there is no quarrel necessary. If we have not yet succeeded, in this effort, as it is at present represented by the wilderness bill, we should work further to perfect the bill, and you foresters can certainly help us.

If perchance we *have* had success in incorporating this concept in the proposed legislation, and yet have not succeeded in making our purpose *clear*, perhaps our meeting tonight can help clarify our purposes.

In any case, the discussion that you will carry on is of great importance to me, and I do not wish to postpone it too long by talking too much myself.

I am prepared to discuss in detail our need for wilderness, but unless requested, or challenged, to do so, I shall not tonight enter into such a discussion. I shall assume that all who are here feel that wilderness areas are desirable, and shall content myself with the comment here that our wilderness need is not only a recreational need but also one that arises from various other values that the primeval also has for us.

The assumption that we here agree on the desirability of wilderness is consistent, however, with a recognition that our problem in agreement is one that has to do with the means we can use for seeing that we do have wilderness.

To insure something like a congress of minds, I should like to state the premises on which our proposed legislation has been based.

The first of these is the assumption that our civilization is destined to occupy for its purposes all of our land, that there are no areas which can be expected to be without the dominion and management of man.

A similar assumption is that no areas will persist as wilderness except as they are deliberately so preserved. Except as we manage them to be unmanaged they will certainly come under management.

Another of our assumptions, based on practical considerations and feasibility

(*Turn to page* 51)

AFA's Chief Forester Pomeroy

Statement before House Subcommittee on Public Lands opposing House bills 361, 500, 906, 1960 and 2162

BUILT-IN LOBBIES

I AM Kenneth B. Pomeroy, representing The American Forestry Association, an 82-year-old organization with nation-wide membership embracing every segment of forest conservation. Throughout the association's long history it has crusaded diligently for protection and wise use of the nation's natural resources. For twenty-odd years its Trail Riders of the Wilderness expeditions have enabled many people to know and enjoy the scenic and spiritual values of wilderness. Consequently, it is distressing to find ourselves in disagreement with friends of long standing.

First may we review the association's basic philosophy of multiple use as a means of attaining the greatest good for the greatest number in the long run?

Multiple-use management simply means the coordinated use of all the resources and values of the land. This does not imply that every use shall have a place on each acre. That is not possible. It does mean that every portion of the forest shall serve the purpose for which it is best suited. Furthermore, all uses shall be integrated with one another to provide the utmost return in terms of economic, esthetic, and social values. It also means that all uses shall receive equal consideration in determining which shall be paramount or subordinate on a given area.

Usually the dominant use is determined readily, but sometimes there are conflicts of interest. Management of such problem areas requires careful study of all the resources present, the ultimate needs and benefits to be obtained, followed by impartial weighing of the evidence and wise decision. This pattern has been used successfully by the Forest Service throughout its long existence. The National Park Service is coordinating its activities through its Mission 66 program, and similar plans are being developed for wildlife refuges.

How then will the proposals contained in H.R. 361, H.R. 500, H.R. 906, H.R. 1960 and H.R. 2162 affect the administration of these bureaus?

We believe that creation of a National Wilderness Preservation System, to include the wild portions of national parks, national forests, Indian reservations and wildlife refuges, not only is unnecessary but it is unwise. If such a system is created, with a Wilderness Council to review all proposals, make surveys, prepare reports and dispense information, how then can one deny the creation of other resource councils? A Timber Council perhaps to see that sufficient land is being assigned to wood production? A Council of Wildlife to decide when game and fish interests shall precede crop production or the utilization of water? A Recreation Council to make sure that national parks serve automobile tourists as well as wilderness enthusiasts? A Grazing Council for the benefit of stockmen? In the end such councils would function as "built-in lobbies," create stalemates by opposing one another, and greatly impair administration of the public lands. In fact establishment of a Wilderness Council would open the doors for every other special interest.

Proposals for a Wilderness Council bear a striking similarity to repeated efforts of grazing interests to secure a toe-hold on the public domain. Thirty-one years ago, the Stanfield Bill, S. 2584, the first of many such bills, proposed that the Secretaries of Agriculture and Interior establish local grazing boards, a majority of whose members "shall be selected by the grazing permittees." The objective was to place stockmen in a position to over-rule decisions of trained, experienced administrators of the public lands. Today the effort is aimed one step higher and seeks to place "six citizens known to be interested in wilderness" between the secretaries and Congress.

On April 6, 1926, the Directors of AFA unanimously agreed that any legislation relating to grazing on the national forests should:

"Conform to the basic purpose underlying the establishment of the national forests and the principle of administrative discretion in regulating their occupancy and use, as expressed in the Acts of March 3, 1891, and June 4, 1897.

"Conform to the principle of safeguarding the property rights of the nation in the lands embraced in the national forests by preventing the acquirement of private rights by any means whatever, direct or indirect, that may in any way impair the permanent rights of the United States in these properties.

"Conform to a form of legislation which retains in the Secretary of Agriculture the grant of broad administrative authority in contrast to specific grants which attempt to enumerate the details of administrative action."

From time to time these principles have been reaffirmed by the Directors of AFA. They are part of the association's present stand on wilderness proposals.

Now there are times when expert advice is desirable. Our association has no objection to the creation of advisory committees so long as they function in a purely advisory capacity. But The American Forestry Association does believe that it is contrary to the public interest to interpose a Wilderness Council between the legislative and administrative branches of Congress.

On the other hand wilderness, recreation and wildlife are entitled to better recognition than they now enjoy. Therefore, The American Forestry Association recommends that legislation along the following lines be considered:

"That it is the policy of government that all the resources of the public lands shall be so managed, conserved, utilized and developed as to assure maximum public multiple use thereof; that public use for purposes of recreation, including wilderness enjoyment, hunting and fishing, is a beneficial and proper use of such lands; that the development and maintenance of such areas and facilities, including maintenance of wilderness areas, is a proper function of the Secretaries of Agriculture and Interior for their respective departments."

CANNED DUCK CALLS ON THE PAN

WHETHER mechanically-perfect High-fidelity recorders that lure ducks and geese within range of hunters' guns pose a threat to the species and should be outlawed is a question that may prove a hot potato in coming months and may find Assistant Secretary of Interior Ross L. Leffler, of the Fish and Wildlife Service, locking horns with the manufacturers of the devices and a number of prominent sportsmen.

A series of hearings with State Game Administrators to probe the problem was instigated by Fish and Wildlife and will continue until August 7. Meanwhile, the North Carolina Wildlife Resources Commission headed by Clyde P. Patton has already condemned the use of the recorders and urges that Fish and Wildlife ban their use. Other sportsmen's organizations may follow suit.

According to Mr. Leffler this new type of call is different from anything used in hunting up to this time. It records the many sounds made by contented geese while feeding with almost uncanny accuracy. Thus a regular band concert of geese sounds can be broadcast right in the blind that will attract flying geese a quarter of a mile away. In fact, the effectiveness of this type of call is so great that extended use of the device might threaten the preservation of the species, Mr. Leffler said.

According to Fish and Wildlife, in Maryland, the luring effects of the call resulted in the killing of 1,285 geese from four shooting pits. It was estimated that the kill of geese in Kent County, Maryland, which amounted to some 30,000 birds, was 50 per cent in excess of what it would have been had it not been for the electronic call.

In North Carolina, reports indicate that 2,000 geese were killed on one farm, far in excess of the number taken prior to the advent of the electronic call. Good weather or bad, the call appears to be equally effective in luring birds to the hunter's gun. Even in "blue bird" weather, geese resting on a refuge have succumbed to the persuasive tones of the call to be lured to their death before a blind 500 yards from the refuge boundary, Fish and Wildlife said.

In fact, the call is so technically perfect that some wildlife specialists

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By ALBERT G. HALL

AUTHORITY FOR THE ESTABLISHMENT OF "SUSTAINED YIELD UNITS" on national forests will be no longer exercised by the Department of Agriculture, according to Under Secretary True D. Morse. A sustained yield unit, under the authority given to the department in the Act of March 29, 1944, is an allocation of all or part of the sustained yield capacity of a national forest area to a local community for primary manufacture. Purpose of the act was to assure dependent communities of the availability of sufficient timber, without competition from outside, to maintain established timber-dependent industries. Five such units have been established since 1948. Applications for other units had been denied either upon preliminary study or following public hearings. The 1944 act also authorized the establishment of cooperative units under which a private timberland owner-operator could combine his timber for management purposes with that of an adjacent national forest in order to facilitate sustained yield management on the combined areas. Under this arrangement the cooperator became eligible for federal timber at the appraised price without competition. Only one such unit has been established—the Shelton (Washington) Cooperative Sustained Yield Unit in cooperation with the Simpson Logging Company. Under the terms of the present contract, that unit will operate until the year 2046, assuring a timber supply to the communities of Shelton and McCleary. The Forest Service now estimates that there are few situations which conceivably might qualify for either federal or cooperative units. Accordingly, the department has determined to discontinue further establishment of sustained yield units. In his report to the Congress, Secretary Morse also indicated that the department would not object to revocation of its authority in this matter if provision is made for the continued administration of established units. (Comparable units, known as "marketing areas," were discontinued by the Bureau of Land Management, Department of the Interior, in April.)

CONSOLIDATION OF FEDERAL FORESTRY ACTIVITIES as recommended by the Hoover Commission, or at least Presidential consideration of the recommendation, is being sought by Senator Murray of Montana, chairman of the Senate Committee on Interior and Insular Affairs. In a letter last month to the President, Senator Murray asked for the President's views. An earlier letter had been answered to the effect that the President would seek the views of the federal departments. The Montana Senator expressed "misgivings that the cause of greater efficiency may be weakened by reliance upon departmental views in this matter." He indicated that "by consolidating federal forestry functions, the taxpayer might receive more efficient service for his tax dollar." The Hoover Commission in its study of federal forest management agencies had recommended that the forestry activities of the Departments of Interior and of Agriculture be combined, indicating that the logical place for such consolidation would be within the Forest Service of the Department of Agriculture. Earlier in this administration a group of Western Senators and Representatives had made clear to the White House that they would oppose any such consolidation.

DEPARTMENT OF COMMERCE APPROPRIATIONS BILL as signed by the President (Public Law 85-52) includes $25,000,000 for forest highways (public roads through national forests to be built by the Public Roads Administration) and $5,682,000 for the Business and Defense Services Administration, maintaining in the latter figure a Senate restoration of $2,167,000 for operation of the industry divisions. Initial House action would have eliminated the forest products division along with other industry divisions.

(Turn to next page)

ACTION BY THE SENATE ON DEPARTMENT OF AGRICULTURE APPROPRIATIONS will restore the acreage reserve phase of the Soil Bank Program which had been eliminated, so far as future contracts were concerned, by the House. It is anticipated that the Senate-House conferees will retain the Soil Bank Program, but that the earlier action by the House may be a prelude to a revision of farm legislation in a separate bill in the next session of Congress. The Senate supported the House in its denial of $5,000,000 requested for expansion of state forest tree nurseries because of the "slow rate of signup for practices requiring seeding stock." (During the current fiscal year, $5,100,000 has been advanced by the federal government for state nursery expansion.) A Senate committee amendment to limit the average rental payment for the Conservation Reserve phase of the program to $7.50 per acre was defeated. The Senate also raised the limitation of expenditures for the conservation reserve to $350,000,000 (the House figure was $250,000,000). For soil and water conservation activities of the Department, the Senate voted $497,555,000 as compared with $535,000,000, allowed by the House and $668,441,600 requested in the budget.

FEDERAL TIMBER SALES POLICIES ARE RECEIVING CONGRESSIONAL ATTENTION. Problems brought to the attention of Congress when the special "timber committee" held its hearings in the West and in Washington, D. C., two years ago are still being worked upon by the Senate Committee on Interior and Insular Affairs. Early in June, the Indian Affairs Subcommittee concluded hearings on timber sales and contract performance in relation to the Quinault Reservation. Principal concern appears to be the price received by the federal government and by the Indians for timber sales. Correlated with the approach taken by the subcommittee, in its discussions of appraised prices and of adjustments of prices on long-term sales, the General Accounting Office has completed audit reports of Forest Service and Indian Affairs northwest regions, and an over-all audit report on the Forest Service. The GAO's recommendations tend in the direction of increased stumpage appraisals and measures to increase competition to the maximum as a means of obtaining higher prices for federal timber.

THE POSSIBILITIES OF A FORM OF TIMBER ALLOCATION are being studied by the Senate Committee on Interior and Insular Affairs. Senator Neuberger of Oregon has had the committee staff develop rough drafts of a measure designed to assure small operators, especially those who do not own timber, of a chance to bid for federal timber without competition from larger timber owning companies. In principle, the proposal is to limit the amount of federal timber that may be purchased by any one operator, and to tie such limits to a timber owner's sustained-yield capacity. The measure has not yet been introduced. Rough drafts are being circulated for comment, and it is not expected that a bill will be introduced in this session of the Congress.

LOANS FOR OWNERS OF SMALL FOREST TRACTS are proposed by Representative Rains of Alabama, if owners accept and follow approved commercial forestry measures. His bill, H. R. 7678, would permit the Secretary of Agriculture to enter into contracts with landowners under which the secretary would designate the lands to be used and the practices to be followed. In return, the federal government would pay the costs of site preparation, planting and other operations necessary to establishment of commercial forestry. In addition the landowner would receive payments for five years of up to 60 percent of the annual growth value, and would be eligible for 3 percent loans of up to 75 percent of the value of the annual increment. Loans would be secured by a first mortgage or lien on the timber. The secretary would be authorized to inspect the committed lands and to provide technical advice and assistance, including marketing assistance.

NEWS AND NOTES. The FAO Council has agreed that the Fifth World Forestry Congress will be held in either Washington (State) or Oregon . . . Sherman Adams, the Assistant to the President, and Prof. Robert I. Ashman, retiring head of the Department of Forestry, University of Maine, were awarded honorary degrees by that institution on June 9. The commencement address on "Waging Peace" was made by Gov. Adams . . . Sixteen hundred campfires will burn twice daily at the Boy Scout Jamboree, July 12-18 at Valley Forge. A major jamboree feature will be conservation of renewable resources . . . Dr. George A. Garratt, Dean of the School of Forestry, Yale University, was awarded an honorary degree last month by the University of the South, Sewanee, Tennessee.

Editorial

It's All Done With Mirrors

We hope our readers will look at the report on the recent watershed workshop of the Middle Atlantic States starting on page 16 of this issue. It attempts to answer some of the questions you have been asking us in recent years and particularly since the enactment of Public Law 566.

We particularly tried to pin down Clayton M. Hoff, the principal architect of the potent Brandywine Valley Association on what makes a successful small watershed program really work. This is what he said: "A watershed program to be successful should deal with **all** problems and **all** natural resources; be administered by representation from **all** interests; secure assistance of **all** local, state and federal agencies; and be directed toward providing the maximum benefit of **all** interests."

Study that definition a little and it is highly possible that some of the problems you have been encountering on your own watershed will start coming into focus. You will note that Mr. Hoff did not say that a successful watershed program should deal with **some** problems and be administered by **some** interests. He includes **everybody.**

This means that conservationists must be encouraged to sit down and talk facts with utility company managers and the executives of pulp and paper and steel mills. How is the right climate established to accomplish these objectives? Well, it wasn't done on the Brandywine by hammering away at polluters and calling them names. Perhaps President McIlvain, of the Downingtown Paper Company, of Downingtown, Pennsylvania, came as close as anybody to putting his finger on how it is done when he reported, almost with wonder, that the Brandywine Valley Association proved to be a pleasant shock to his firm. (See page 20.) It didn't attempt to browbeat and bully the firm. It came in asking what it could do to **help.** It presented the firm with irrefutable facts. It presented the firm with a tailor-made community relations program.

Now, of course, all of us know that it is going to take more than a little pleasant conversation to make the head man of a big industry lay out great sums of cash dollars to clean up polluted water. What was Hoff's magic? Well, first of all they trusted him and a man who can be trusted can accomplish a great deal in any line of work. But we have always thought that most important of all was the fact that Hoff is the man in watershed work today who perfected the device of holding up the mirror to conditions as they exist. Remember how your English teacher used to tell you that a good novel holds the mirror up to life? Well, that is what Hoff did in the Brandywine except he did it with pictures as well as words. He photographed every open sewer, every eroded farm, and every factory returning water to the river in the form of sludge and other waste products.

And did you ever happen to look at a closeup of an open sewer, or the waste in such rivers as the Potomac, or an eroded farm, on a big screen? It really gives you a jolt, particularly if its *your* farm or *your* factory that is under the photographic microscope. This program worked. It worked everywhere, even in the august forum of the Delaware Legislature where Hoff turned the stomachs of the legislators just before lunch. And today there are no open sewers in Wilmington, scarcely any erosion on the Brandywine, and factory pollution is gradually being pared down although some industries must do more if firms like Downingtown Paper are not to be put in a bad competitive position.

Personally, we never visit such areas as the Muskingum and Brandywine valleys without experiencing a glow of exultation. This is land at work the way it was meant to be at work. It's wise use with everybody—city and rural people alike—getting into the act. Reading about it is O.K., of course, but you've really got to see this program at work to get the proper spirit. As far as the eye can see and further is one great diorama of beauty—contoured lands, grassland galore, millions of planted trees, woodlots under good management, miles and miles of multiflora rose fence that combines both beauty and cover for wildlife, water more pure than it used to be, people fishing and children swimming in creeks and ponds that were previously labeled "Polluted—No Swimming."

As Assistant Secretary of Interior, Ross L. Leffler told the workshop, if there is a better way—a more American way—to solve our watershed problems in America, he hasn't heard about it yet. In a word, this **is it;** but everybody has got to get into the act for the job is too big and too costly for any one group, governmental or private, to handle alone. This poses a tremendous challenge to the American people and sometimes, to be honest, one gets discouraged. Then we start listing all the energetic young men who today are running their own watershed shows around the country where only a few years ago there were none. There's Howard Mendenhall and his Rend Lake Conservancy District, in Illinois. There's Bud Foster and his Connecticut River Watershed Council. There's Dave Unger of the Upper Susquehanna Watershed Association. There's Malcolm Crooks over at the Stoneybrook Watershed Association, at Princeton, N. J. There's Stanley Mesavage over at Lackawaxen, Pennsylvania. And many, many more—and growing all the time!

And in every instance local people are sitting on top of the heap calling the shots. Which is the way it should be in this country.

Diorama under construction shows meeting of first Legislative Assembly in America, July 30, 1619

JAMESTOWN

By E. JOHN LONG

Here is the replica of the 100-ton flagship Susan Constant

WITH the exception of water and food, nothing played a more vital role in the founding of Jamestown than lumber and forest products. Wood literally provided the essential framework for the first permanent, English-speaking settlement in America in 1607.

It was the stout English timbers of three small sailing vessels that enabled the intrepid pioneers of the Virginia Company of London to weather a long and tempestuous voyage to the New World. And it was a strong log fort, built of native Virginia trees, that protected the colonists, again and again, from the attacks of hostile Indians.

Jamestown's first homes, storehouses and church were fashioned of rough-hewn beams and planks, and firewood or charcoal cooked all the colonists' meals, and kept them warm in winter. After nightfall,

Reconstructed James Fort of 1607, with its 18 quaint houses

Statue of Captain John Smith looks out on James River

Hand-hewn building, 17th Century style, rises near Jamestown

FRAMEWORK OF EMPIRE

the streets were lighted by faggots soaked in animal fat or turpentine, burning in metal holders atop short poles.

Even to list the multitudinous ways in which the settlers put wood and forest products to work would require more space than is here available. Metals were always in short supply because they had to be brought from faroff England, many weeks sailing distance away. So house timbers were notched to hold them together; wooden pegs were substituted for nails in furniture, flooring and utensils. Woody vines bound hogsheads of tobacco. Dock planks and piling were similarly lashed into solid structures.

You needn't take a historian's word for this. All this summer and fall you can see for yourself what a dominant part the forests played in the first successful colonization by

Robertson's Windmill, landmark of 18th Century Williamsburg

Restored 18th Century Gaol, which confined criminals and debtors

Englishmen through a marvelously accurate restoration of the Jamestown effort, marking the 350th birthday of the founding of Virginia.

Those in charge of this year-long Jamestown Festival very wisely left the original town's crumbling foundations, the old brick church and the museum of Jamestown Island strictly alone, to tell their own story. On the mainland nearby, however, a wide area was cleared of underbrush so that accurate reproductions of the structures of the earliest settlements could be erected without interfering with archeological sites, whose artifacts are being studied by historians.

Thus Jamestown, in 1957, offers a "double feature" to visitors—the island, with the ruins of the original town very much as the ravages of three and a half centuries have left them, and the festival area, where the life and times of early 17th Century America have been restored as faithfully as research and time will permit.

Suppose we begin with the new festival area on the mainland. Then the ruins on the island will make more sense. The visitor's reception and information center, with its lofty timber roof, supported by flying buttresses of laminated wood, at once arrests the attention of those interested in forestry. Next to it is "The Mermaid Tavern," actually an outdoor snack bar, which commemorates the name of an old oak-panelled pub where the members of the original London Company dined

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At the Information Center in historic Williamsburg, Virginia, visitors may see an exhibition of early English and American house frameworks

Bringing in the Yule Log is an ancient tradition revived at Williamsburg for holidays

One of the overlooks on the Colonial Parkway shows unusual study of cypress

New Colonial Parkway extension between Williamsburg and Jamestown, with remains of Confederate fortifications at the right

Needed: More Access Roads

By SENATOR WARREN G. MAGNUSON

Senator Warren G. Magnuson, Washington, chairman, Senate Interstate and Foreign Commerce Committee

AMERICANS have an avid—and growing — distaste for poor roads. They neither like to drive over poor roads, pay for them, nor will tolerate them longer than forced to do so.

Approval of the National Highway Act by the 84th Congress proved this in my mind.

Americans look forward to the results this national highway program will produce. They anxiously await its completion as each mile of concrete and blacktopping is applied.

But only part of the fight is won. Successful as the inter-state and intra-state highway expansion program has been, long overdue attention is only now being given to another little heralded, long suffering, but vital national backbone highway service.

I refer to that vital network of timber access roads over which must move heavy equipment to halt fire or pestilence on a moment's notice, or proceed in orderly fashion to harvest ripened trees.

Frankly, to date, this program has been sold short by a federal policy which permits co-mingling of new construction money within a Forest Service budget which also pays design, maintenance and repair costs.

In one breath, Congress has appropriated money to build new timber access roads. But seldom—if ever —enough money was appropriated —directly—to meet the full need.

Instead, a round about approach was used. The Forest Service used the appropriated money until it ran out. Then it said, in effect, to the prospective timber purchaser, "The federal government can build no more access roads this fiscal year—now you will have to build the road to the timber you are buying."

The answer of the timber buyer, in turn, had this simple logic, "I'll build the road but deduct it from the price I pay for the timber; and, by the way, since I have to build the access road, you, the federal government, should offer me a block of timber for sale that is large enough to merit construction of the road."

The larger the block of timber placed on sale, the fewer the number of companies which could afford to bid, because only the larger concerns could finance this type of operation.

So, in addition to paying heavily for timber access roads built in this manner by having the construction cost deducted from the bid price, the nation paid a further price through sharply reduced bid competition.

For confirmation of this, glance, for example, at the answers I received as a member of Senate Appropriations Committee, when I questioned Ervin L. Peterson, the Undersecretary of Agriculture, at considerable length at a recent hearing.

Peterson had explained how only $11,441,076 of the $30,951,122 fiscal 1956 access road budget had actually gone for timber access road construction. (According to Peterson, $3,376,135 had gone for engineering, $1,684,504 for trail maintenance, $7,500,952 for road maintenance, $4,555,652 for bridge replacement and $2,392,803 for all purpose roads and trails.)

Peterson had taken great care to point out that another $23,436,865 in access roads had been built by timber operators — those who had bought the federal timber stands. So I asked him to "tell the committee how you secure this road construction."

Peterson explained "when it is necessary for timber purchasers to build roads in order to remove the timber which has been sold to them, the Forest Service makes an allowance for the estimated cost of such road construction in its appraisal to determine the advertised price of the timber."

"So, in a way," I answered, "*you* are using funds that would come to the Treasury if the roads were financed by appropriated funds?"

Peterson said he wouldn't express it "quite the way you have done," but added, "I do agree that regardless of whether the purchaser builds the roads or the government builds the roads, the expense of the transporation system necessary to remove the timber, comes out of the government."

At this point we got into facts and figures which showed, quite con-

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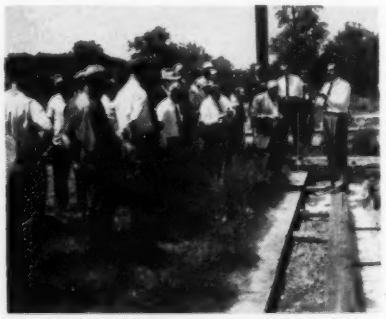
Restoring this valley to a state of ecological health was all done with mirrors—the art of using pictures and words to pinpoint land abuses that needed correcting

Teamwork on the Watershed—L. to R., Bob Struble, Brandywine Valley Assoc.; Howard Busch, area supervisor, SCS; and Robert Powers, county agent of Chester County, Pa.

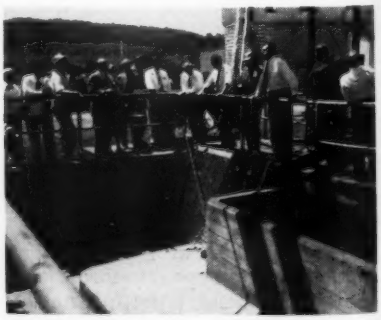
Edited by JAMES B. CRAIG

MAKING A WA

The Lukens Steel Co. is a good neighbor. This sewage treatment plant shows why



So is the Downingtown Paper Co. whose waste disposal plant is shown to workshop



Downington Co. may be put in bad competitive position unless others help

All Brandywine Valley and Workshop pictures by Earl Brooks

ERSHED WORK

MANY of the questions that cross the desk of *American Forests* these days have to do with water and watersheds. Some of these questions can be answered in Washington and some of them cannot. The spring (1957) WATERSHED WORKSHOP of the Middle Atlantic States at Wilmington, Delaware, presented a good opportunity to expose a growing list of reader questions to a conference composed of watershed specialists. In two days, practically all of these questions were raised or touched on in one way or another. Accordingly, we will endeavor to pass along the know-how of these people in an effort to give our readers facts in which they are interested. In some cases, the answers could be found on the land itself for the work of the host organization, the Brandywine Valley Association, is world-renowned.

***Question*—Special pleading has become a fine art with conservation groups. Right now the big push seems to be in water. Is the importance of this problem being overemphasized?**

Answer—Ross L. Leffler, Assistant Secretary of the Interior, told the workshop, "The American people have *got* to realize that unless we learn to manage and conserve our water, we will be unable to maintain our pre-eminence in the world picture. No water—no civilization, it's as simple as that. And the situation in the United States is becoming worse, and I bow my head in shame because there are water-using industries who still will not recognize this fact. Many a man has lost his life in the West fighting over a water hole, but for years we in the East did not recognize the importance of water to that man. But we may for that problem is now moving inexorably toward our Eastern seaboard. *You people here are working on the most vital problem in America today.* And as of now I know of no other way to get the job done than the way you people are doing it."

Q—What is a good definition of a well-managed small watershed program that I could present to our Rotary Club?

A—Vice President Clayton M. Hoff, of the Brandywine Valley Association, replies, "A watershed program to be successful should deal with *all* problems and *all* natural resources; be administered by representatives from *all* interests; secure assistance of *all* local, state and federal agencies and be directed toward provid-

L. to R., Interior Assistant Secretary and Mrs. Leffler; Forester Maurice Goddard

Agriculture Secretary Henning (R) and Fred Coates, of Woodland Cooperative

ing the maximum benefit to *all* interests."

Q—A good watershed association seems to be helpful in obtaining help under the Small Watersheds Act. What sort of a person do we need to head up a group of this type—a forester?

A—Howard Mendenhall, manager of the Rend Lake Conservancy District in Illinois, is a forester. Mr. Hoff, of the Brandywine Association, is an engineer. Bryce C. Browning, of the Muskingum Watershed Conservancy District in Ohio, is a former newspaperman and chamber of commerce secretary. All three are people with drive, good idea salesmen, and are devout believers in teamwork, and the public trusts them.

Q—There seems to be some confusion as to the relationship of the small watershed association and the implementation of Public Law 566. What is the proper connection?

A—Under Public Law 566, the Soil Conservation Districts serve as the technicians who do the work on the land as regards flood control and land improvement. However, many people think that not enough provision is made here for proper recreational development and water supply on these SCS structures. Nor does the Soil Conservation District usually have the funds to do the educational job that is necessary to rope in all people concerned including business and utility interests, people in the cities and others. This is where the small watershed association can really star. When properly organized and run by people the public trusts, it can bring *all* groups and interests into the picture just as the Brandywine Association plans to do in Delaware and Pennsylvania. Very soon now, the SCS will present facts and figures to the association on the tentative costs of flood control structures on the upper Brandywine proposed under Public Law 566. Then the association will call in all other interested groups including the Fish and Game people, the Department of Forests and Waters, the Water Resources Committee who can furnish facts on what quantity of water is needed at *all* times during the year. The aim? Representation by *all* interested groups with everyone knowing what the plan of attack will be.

Q—Your magazine should probe into the pollution problem more exhaustively. In our region, the problem is pollution, not flood control. And while we've hammered away at the industry, we haven't had much suc-

Samuel B. Bird, right, secretary, Jos. Bancroft & Sons Co., ". . . In using water for the above mentioned purposes (textile manufacturing) clear water is preferable. To illustrate this, I have data which show that during the 4-year period of 1943-46 there was a total of 236 days where turbidity of the creek was above 50 parts per million as compared with 141 days in 1953-56. . . . We filter our own water, and to obtain best results we use alum, lime and soda ash to precipitate solids. . . . Reduction in the amount of alum purchased in same period was 32.3%. In the case of lime . . . reduction was 53.8%."

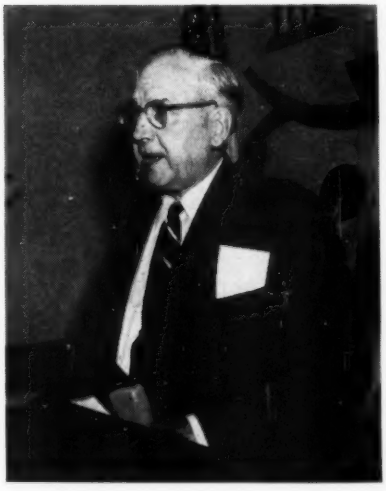
Robert R. Balmer, right, Engineering Department, E. I. Du Pont de Nemours & Co., "From the chemical industry viewpoint, watershed organizations such as the Brandywine Valley Association are important. . . . A vigorous watershed organization certainly indicates that a community has aggressive leaders who are concerned with public interest and are willing to give their time and effort for public improvement. . . . the preferred approach is through community organizations such as yours."

Colonel W. A. F. Pyle, left, manager, Industrial Department, Delaware Power & Light Co., "We all must now recognize that each of our communities has its own 'Father of Waters.' While each of the vital streams and rivers in our area is certainly not the 'Great Father of Waters' as is the Mississippi River, still to the thousands who live and will live in our area *all* of their future is dependent upon making the utmost of the watersheds available to them, and seeing that unpolluted water from upstream does not deny the rightful use of those living downstream."

Peter J. Short, Jr., left, Lukens Steel Co., "Water is the life blood of the steel industry. Without it, we cannot exist, far less progress. . . . The present concern about the availability of a sufficient supply of clean water and the ravages of flood water have come upon us progressively. . . . We have over the past few years, constructed within the confines of our plant property several dams or reservoirs. . . . Lukens has taken steps to reduce the possibility of flood, by taking an active part in the campaign of the Brandywine Valley Association to provide an adequate and controlled supply of clean water in the streams and tributaries of the Brandywine Creek."

George M. Worrilow, left, Dean of Agriculture, University of Delaware, "Statistics reveal that those farmers in one watershed — the Brandywine of course — are better off than most. . . . We are greatly concerned with the phenomenal growth of our population and the loss on farm land—more people—fewer acres. . . . The vital and universal importance of water use and conservation to the total economy . . . and the welfare of all its citizens makes it necessary now that we anticipate and prepare for the solution of our water resource problems before they reach the critical stage."

Waldorf R. Ringe, right, Society of Industrial Realtors, Philadelphia, "Watershed groups throughout the region are learning slowly and their community leaders now recognize that the people of their communities are the principal stockholders in this big business called America. That they in their local watershed areas represent a small segment of America and that beside being stockholders are in addition acting as trustees for future stockholders. . . . Watershed practices to be effective should be executed by local people at community level, on a fully integrated basis, watershed by watershed, throughout the region."



F. Huston McIlvain, above, president, Downington Paper Company, ". . . the Brandywine Valley Association has brought a new approach to industry and one that I think has been tremendously beneficial because it has taken us essentially out of the defensive position we were in before with all of our efforts devoted to protecting ourselves against the prosecution of state and local agencies into one of trying to do the best we can and having an aggressive interest in the improvement of the Brandywine. . . . It has set forth an incentive instead of the stern approach of the state and legal field."

Honorable J. Caleb Boggs, left. Governor of Delaware, "We are very proud indeed of the fact that the Brandywine Valley experiment and operation touches on our state; because that valley typifies a real success story you might say in America from the early days to the present day and how people and industry in that area have progressed. As our population grows . . . and as our industrial progress and growth continues why it is just more and more important as each of you know better than I that we do get together and not only preserve our natural resources but plan to use them wisely and insure for the future those natural values. . ."

George T. Sargisson, right, executive director, Recreation Promotion and Service, Inc., "The BVA has directly and indirectly been working on improving recreational facilities in many many ways. First, on the assumption that clean water is needed for recreation in the form of fishing, swimming, wading, canoeing, hiking, and picnicking, not to mention for drinking purposes, and industrial use, they have tackled the pollution problem. . ."

Colonel Allen F. Clark, Jr., above, Corps of Engineers, U. S. Army, "We are trying to look a great many years into the future and to make a water resources plan which will reasonably fit the needs of the Delaware Valley for many years to come. . . . There need to be organizations such as yours to consider and debate the problems. There is a pressing need for an overall Delaware Council of organizations interested in water problems that can circulate the data on the basic problems, organize and supervise the debate. . ."

cess. What do people in other areas do about this?

A—F. Huston McIlvain, president of the Downington Paper Company, in the Brandywine watershed, told the workshop, "Those of us in paper were used to having our heads bloodied by the various efforts of people genuinely interested, but whose approaches were pretty rough, to say the least. We, as a paper manufacturer, were one of the major polluters of the Brandywine and try as we will, we still, I think, cause quite alot of trouble. Accordingly, when the Brandywine Valley Association was formed most of us viewed it rather dimly. But we were wrong and were in for a pleasant surprise because we found the Brandywine Valley Association's approach to interesting us in doing a better job was to *come in and help us.* They didn't help us in the technical processes because, frankly, those are things that are in the area of the water treatment engineers and chemists. But they did, I think, do a great deal to build up the pride of the company in the Brandywine and in the attempt to make a better area of the Brandywine Valley. In effect, you might say they presented us with a community relations program. Few months go by when we do not have a tour of school children or grown-ups to look at our treatment plant to see the sort of job we are doing. Their trips and tours visit us frequently and there they see this awful looking waste water coming out of the plant which is so gray and so dense that you can barely see light through it. The water is returned to the Brandywine 30 percent clearer than when we take it out first. They see the large amounts of sludge which are removed. And at this point of the game I think they come to recognize the problem that costs us some $40,000 a year just to dig out and haul the sludge away, dispose of it on some dump land. The work

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Geographer Eleanor E. Hanlon inspects new Hagley Museum at Wilmington. Miss Hanlon is conducting her own Watershed Workshop August 12 to 23 at Syracuse University, Syracuse, N. Y.

Master Architect Clayton Hoff, of BVA (L) and Lloyd Partain, president, Penna. Forestry Assoc., study Brandywine diorama

H. J. Simpson, of museum staff, with examples of overshot breast, undershot wheels

Santa Gertrudis steers on Brandywine wing of King Ranch and Secretary W. L. Henning

Workshop group examines pulp for Scott Paper Co. at Wilmington Marine Terminal

Terminal was stacked with raw pulpwood and lumber products, paper, and fertilizer

Elm trees being sprayed by mist blower in Bruce Park in Greenwich, Connecticut

WILL WE LET OUR *Elms* DIE?

By PETER FARB

IN jeopardy today are the most commonly planted and lordliest shade trees rooted in American soil. All species of elms, at least 200 million of them beautifying every state in the nation, are threatened by one of the worst scourges that trees have ever endured. It's Dutch elm disease—a virulent fungus with which tiny bark beetles inoculate healthy trees. The fungus quickly plugs up the elm's water-conducting vessels, wilting leaves and killing branches. Soon the whole tree stands naked and lifeless. Once infected, the elm is doomed.

If we abandon our elms to this disease, the results could be devastating: municipal coffers plundered by an estimated 15 billion dollars just for removal and burning of stricken trees. Replanting other shade trees would cost many billions more—but it would be folly to suppose that we could ever replace the elms now rooted like colonades along the streets of nearly every town and city in the country.

First discovered in Holland just after World War I, within a dozen years the fungus had destroyed half of Rotterdam's elms. During the 20's the disease became epidemic across the continent of Europe, and has virtually decimated the elm population there. In this country, Dutch elm disease has already erased perhaps 40 million elms from the landscape in the 24 years since it first became solidly entrenched around the New York City area. And it continued to take a heavy toll in at least 21 states—ranging from Maine to Virginia and westward to Wisconsin and Missouri—as well as the Canadian Provinces of Ontario and Quebec. "I have no doubts that the disease will spread to every area of the country where elms are growing," says Russell R. Whitten, Chief of the U. S. Forest Service's insect research station at Columbus, Ohio.

However, one encouraging fact emerges from my recent survey of Dutch elm disease: *cities and towns in the infected area have consistently proved that control programs can save the valued elm.* And they have shown again and again that protection is far less costly than doing nothing—and then spending tax dollars to uproot dead trunks.

Look at Greenwich, Conn., one of the first communities in the United States to be invaded by the fungus. By the end of World War II, Greenwich was faced with the real threat of losing most of its 6000 elms. About 200 trees were stricken that year alone. But Greenwich had just hired an energetic Superintendent of Parks, Joe Dietrich, and even before he had completed moving into his new office he had a program.

Dietrich called a meeting of representatives from ten influential civic and garden clubs and presented the facts on Dutch elm control. The wild elms, growing in swamps and woodlands, couldn't be saved. But for little more than a dollar a year per elm, he could reduce the destruction of the city's valued ornamental elms to the absolute minimum. It would be done by going after the beetle carriers of the disease, not the disease itself: removing all dead elm wood which was potential breeding material for the beetles, and spraying the elms with an armor of DDT against the beetles.

"I told the group that it costs the town roughly $75 to remove a diseased tree. That money could be used to protect the same elm for more than 50 years. And after 50 years, we'd have a living tree, not a dead stump," Dietrich said to me.

The clubs petitioned the Board of Estimate and the money was promptly appropriated, unanimously. The citizenry was alerted to the town's fight against the disease: the radio station and local newspaper gave periodic bulletins about its progress; an exhibit explaining the control program went up in the public library. Connecticut Light & Power Company even sent out items about the program with its monthly bills. Landowners' associations and neighborhood groups pooled their dollars for coordinated campaigns on privately-owned elms.

What has been the result of Greenwich's campaign? In the last ten years, the annual loss of elms has dropped from 186 to little more than 30 trees. Dutch elm disease control in Greenwich is now just "routine maintenance" of a shade tree species.

Many other towns and cities have had equal success. Greenfield, Mass., which has nearly one elm for each person who lives there, has kept the rate of afflicted trees to a negligible two-tenths of one percent a year. There, the whole town is alerted to the threat and the Tree Warden receives about 1400 phone calls annually from the energetic citizens, reporting suspicious elms.

Another Massachusetts town, Brookline, has had an outstanding control program since 1948. While neighboring communities are showing double and triple the loss of

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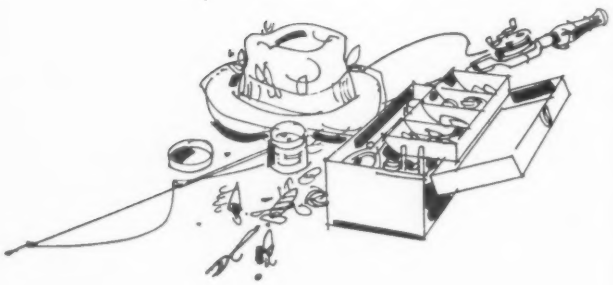
Opening day activity, Summit Lake, where about 20,000 trout are taken annually

Fishermen wait patiently for opening day trout fishing to begin at 6 a.m.

The whole family fishes at these new impoundments

THE LAKES



By ROBERT R. BOWERS

Satisfied fishermen who have both caught their daily limit, 6 rainbows

In West Virginia, trout lakes have relieved pressures on the trout streams

THAT STAMPS BUILT

SOME YEARS ago, a Virginia fisheries expert told me that he believed eastern trout fishing was a dying sport. Coming from such an ardent trout fisherman, this was a strange remark. However, at that time, I was somewhat inclined to agree.

This fellow speculated that state fish hatcheries could not possibly keep up with the ever-increasing demand from growing numbers of anglers, topped off with ever-dwindling trout inhabitable waters. His theory was that as hatchery costs rose and pollution and drought took some trout streams out of production, the demands and crowded conditions upon the few remaining waters would grow to such an extent that state officials would throw up their hands and quit stocking, altogether.

At that time the assumption of this authority seemed to carry a great deal of foresight and common sense. But since that day back in 1952, his predictions have failed to become reality. In fact, one eastern state has taken such steps forward in trout fishing that it is doubtful whether the time will ever come when its residents will not have trout fishing close at hand.

That state is West Virginia. She, like most of the 41 trout fishing states, has had her fish and game budgets strained. But despite the heavy expense of raising and stocking trout, she has neither lost hope nor continued to sacrifice an increasing amount of her license funds to meet the demands as they arise annually. This state has actually expanded the sport to the point where it is possible for mom, dad and all the kids to catch trout, where once only the "old man" ventured forth to fight the rushing white water.

Fantastic? On the surface, it would seem just that. But the people in the Mountain State have taken a common-sense approach to trout fishing, and thereby all of them are profiting by it. More trout are raised in the same facilities through im-

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Whether exclusive use or multiple use policies should prevail on this area of superlative scenic beauty is being widely debated among conservationists

GLACIER PEAK

By KENNETH B. POMEROY

ULTRA-conservationists and multiple use-conservationists, rallying from a recent stalemate over the Three Sisters Wilderness in Oregon, are about to lock horns over management of Glacier Peak in the Northern Cascade Mountains in Washington. Once again the Forest Service is cast in the dual role of land manager and arbitrator, a role played so successfully at Three Sisters that both sides claim "we were robbed." As usual the bone of contention at Glacier Peak, a region of superlative scenic beauty, is the ultimate use or non-use of several billion board feet of high quality old-growth timber.

Heretofore this portion of the Cascade Range has been inaccessible to all except hardy hikers, Trail Riders of the Wilderness, a few hunters, naturalists and prospectors. But civilization is pounding up the lower slopes, clamoring for access as weekend campers, resort operators, loggers and others seek to tap this multi-purpose storehouse.

How much of this majestic region should be reserved as wilderness? "All of it," says the idealist while urging that an additional 450,000 acres be added as a primitive area to the 434,310 acres proposed for wilderness.

Realists say, "Timber is a crop as well as a thing of beauty. Salvage mature trees before they die, but provide for other uses also."

What will be the verdict at Glacier Peak? Both sides are rushing up reinforcements. Wilderness enthusiasts have petitioned the Chief of the Forest Service to preserve the entire area from Stevens Pass to the Canadian boundary, pending completion of a comprehensive study. This is an airline distance of some 80-odd miles. Timbermen label "efforts to lock up vast sections of western forests," as being in defiance of multiple-use principles.

Meanwhile the Forest Service has completed a land management plan for the Glacier Peak area preparatory to public hearings. This proposal deletes several timbered sec-

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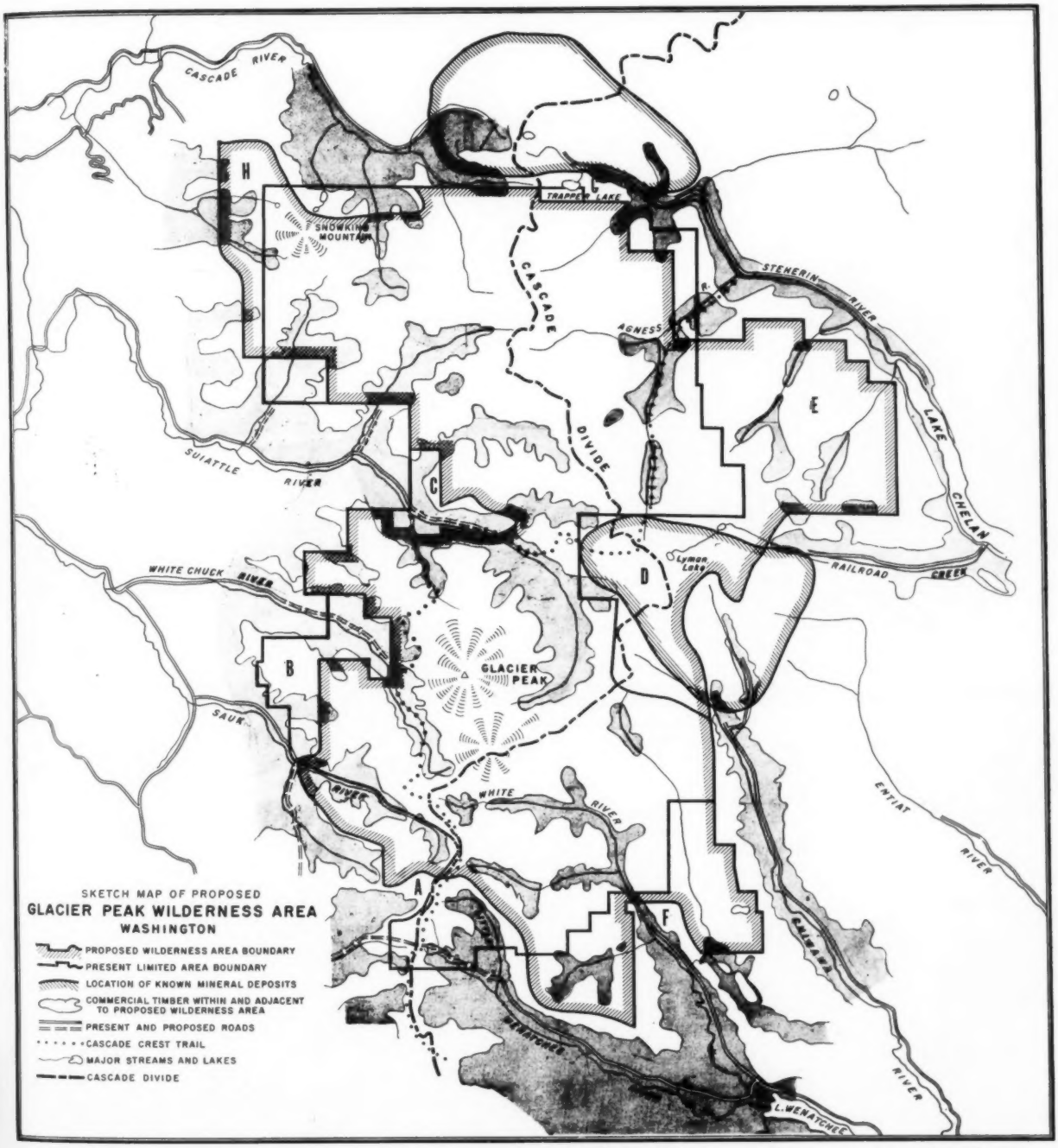
Fog blankets magnificent virgin timber on valley floor nearly a mile below

Glacier Peak is reflected in Image Lake as a Trail Rider seeks evening meal

K WILDERNESS



Map shows the area specifically proposed for wilderness use as well as additions and deletions to present limited area.

Mrs. Dorothy Wright, G. H. Collingwood, and Ovid Butler obviously had a fine time

AFA HAS A PICNIC

Photos by Vince Finnigan

Robby Craig, youngest son of Editor James Craig, tries to share doughnut with Smokey

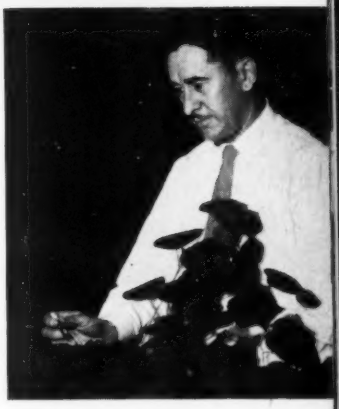
Editor James Craig, left, and Exec. Vice President Fred Hornaday distribute prizes

Accountant Jane Evans is amused as cat begs food from her husband Hugh

Kitchen of Compton home, from which Mrs. Compton, r., served-up delicious picnic luncheon for AFA's staff

Dr. Wilson Compton, left, showed group aerial map of Seneca Farm

Forester Pomeroy had a postman's holiday — examined tree species



PICNICKING is the most widely-known and universally-enjoyed form of outdoor recreation, and last month found staff members and guests of The American Forestry Association engaging in that pastime.

Scene of the outing was Seneca Farms in Virginia and host and hostess were Dr. and Mrs. Wilson Compton. Dr. Compton, vice president of The American Forestry Association, is also president of the Council for Financial Aid to Education in New York City.

A show place in the Greater Washington area, the Compton farm has 1200 acres and is located a short distance above Great Falls on the Virginia side of the Potomac River.

A picnic luncheon was served on the lawn, topped off in fine Southern style by pecan tarts.

After lunch, the guests toured the farm in an automobile caravan. A fine herd of black angus cattle was observed, expansive acres of pasture and crop land, a picnic plot on a point of land that juts into the river, and, of course, a splendid tree farm. The tour ended at the two-story log cabin built by Ross Compton, son of the host and hostess, which commands a magnificent view of the Potomac.

A telegram from President Don P. Johnston, who is recovering successfully from a recent operation at Wake Forest, North Carolina, was read to the guests.

The group lined-up in front of the two story log cabin, built by Ross Compton, who used the wood from the farm

Ass't Editor Betty Kindleberger and husband Dave enjoying lunch

TAMING THE WATERSHED

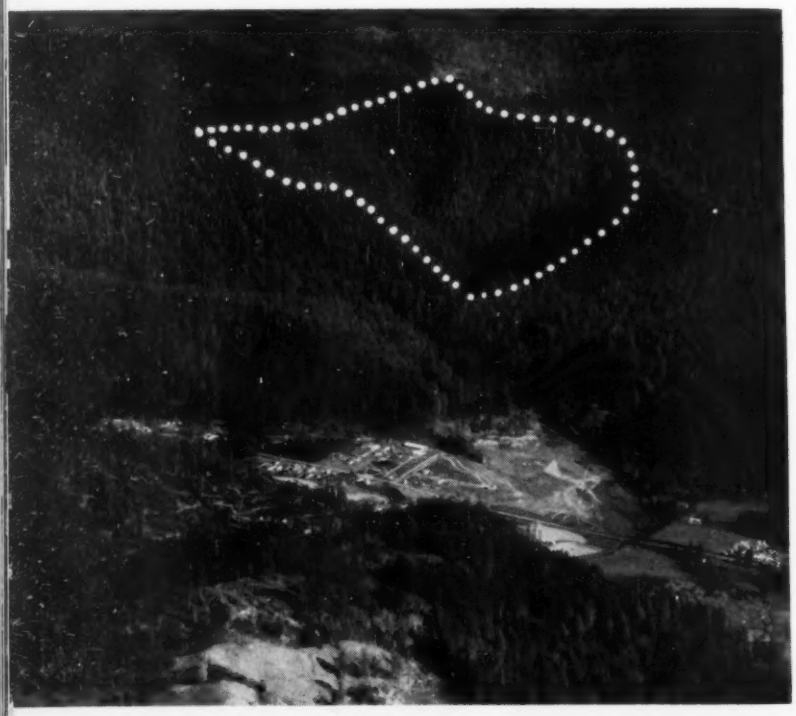
By HENRY J. VAUX
Dean, School of Forestry, University of California

Through research we are becoming aware that watershed management is a complicated business, requiring the cooperation of many people

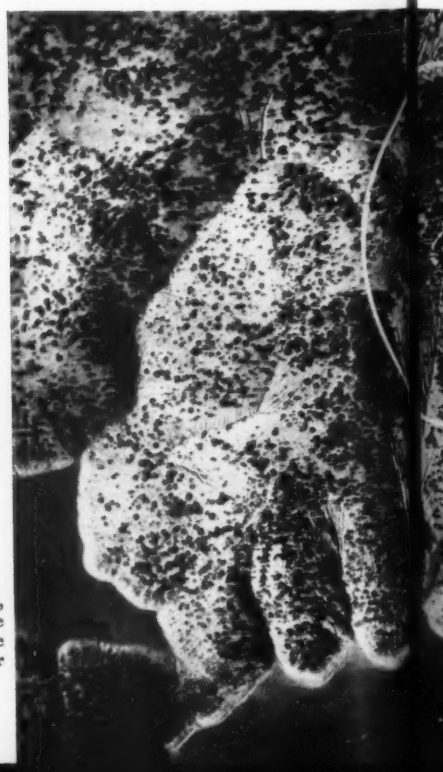
ON New Years day, 1934, a torrentlike flood swept down the San Gabriel Mountains, some 10 miles north of Los Angeles. Water, mud, and boulders carried 34 people to their deaths, rendered 400 homes uninhabitable, and caused $5,000,000 worth of damage.

A search for the cause of this unexpected catastrophe resulted in a surprise explanation: six weeks before the flood a fire had swept the mountains, denuding some 5,000 acres of their natural brush cover. When a three-day rainstorm brought down 12½ inches of rain, there was no forest cover to hold the water and the earth. As a result, 50,000 tons of soil and rock were washed down from each square mile of the burned area. In a nearby area which had not been burned, the same rainstorm washed down only 62 tons of soil per square mile—about one thousandth as much as on the other! From each square mile of the burned area runoff reached 1,000 cubic feet per second, against 34 cubic feet in the unburned area. Here was valid proof that forest cover functioned powerfully to retard runoff and reduce erosion.

These findings surprised many, but not a small group of men in the University of California and the



Fire protection, planned cutting, careful logging are required to protect the creek's water quality and lessen flood danger to homes below the canyon mouth



These experimental pine plantations, circled, show that plant cover can be restored on watershed slopes that have been denuded by fumes from the smelter

Reservoir capacity is being lost rapidly by sand deposited under water (left) as well as on delta (right). Erosion in drainage area was accelerated by forest fire in mountains

Forest Service of the United States Department of Agriculture. These men, with others in this country and abroad, had painstakingly collected data to determine the importance of a relatively new concept: that of watershed management. They had found that the mountain areas can be handled in a way that will help supply the cities with clean water, reduce floods, keep reservoirs from clogging, provide water for irrigation, furnish industry with water, and keep fertile soil from being eroded away. Just how watersheds had to be handled was not very clear yet, but it was obvious that not only dam builders and engineers had their part in controlling our water supply but also foresters, stockmen, farmers, loggers, road builders, miners, and many other people who work in the mountains from where our water supply comes. In California more than 85 percent of the state's total precipitation falls originally on forest and other mountain lands. How people manage these lands is therefore of great importance to water users throughout the rest of the state.

The housewife who has a seemingly unlimited supply of water at her fingertips every time she turns a faucet, may not be aware that water shortage is a serious problem in the United States. Yet, the American dream of unlimited expansion soon may face a test by water. For three D's—drought, distribution, and dirty streams—spell a possible dead end for continued growth of industries and cities, as well as potential disaster for farmlands.

As a nation we now consume 250 billion gallons of water every day and, according to responsible estimates, the figure will be almost twice as high by 1975. The present home use of each American is about 150 gallons of water a day (5 gallons for washing hands, brushing teeth, shaving, etc.; 25 gallons for a bath; 5

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By JESSE STUART

MORNING OF THE LAUNDERED WIND

A newly "laundered" field glistens under the rising sun

LAST night a heavy rain fell, I don't remember when it happened for I was asleep. But this morning when I looked through the window at the stream as it plunged through the tile, I knew there had been excessive rain. I could tell by the way this stream had risen and how it ran over its mint-covered channel toward the weeping willow. This morning I stepped outside and I could smell the mint as never before.

I never inhaled morning air that felt better to my lungs than it did this morning. It is wonderful to breathe fresh air early in the morning when it is filled with the good smells of the plants and blossoms of the earth. This morning was exceptional! I breathed deeply of this multi-scented morning air!

I feel that after an exceptional rain in any season of the year, that wind is washed, dried and ironed. It is laundered wind! And to breathe laundered wind is like wearing a fresh washed, starched, and ironed shirt for the first time.

I cannot but wonder if the time hasn't come when the multiplying millions on this earth will have problems of contaminated air! I believe it will come and that it is now in its infancy. When trying to find causes for lung cancer in addition to our smoking and inhaling, there is the exhaust (fumes) from automobiles in the air. There are so many cars on the earth. We have enough fumes to contaminate the wind!

Then, there is the problem of smog which has hung above cities like an overcast of impurities which

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By MONROE BUSH

Reading about RESOURCES

Monroe Bush

SINCE the publication of Fairfield Osborn's *Our Plundered Planet,* few books have appeared on the use (and misuse) of renewable resources as important as *The American Oasis* by Prof. Edward Higbee (New York: Knopf, 1957. $5.00). I know of no other survey-in-depth of American agriculture that integrates as completely the forms of the past with the needs of the future, that draws with such clarity the human and physical dimensions of farming, as does this study. It is an essential book.

Furthermore, it is a book that *had* to be written. Within the next 50 years the United States must double its agricultural production to feed an anticipated population of 300 million, assuming a dietary standard comparable to the present. Yet recently the administrator of the Soil Conservation Service, in a letter to the New York Times, observed that "during the last 15 years more than 17 million acres of the best farmlands have been converted to nonagricultural uses, and . . . projection of the present rate indicates that an additional 27 million acres of productive land will have been withdrawn from agriculture by 1975." Considering that only 50 million acres, at maximum, can be converted *to* agricultural use, this early doubling of the nation's food supply must be attained on the extent of acreage now in cultivation.

But not more than 10% of our farmers are reasonably efficient in their land-use techniques; for the most part "we still use methods that reduce the inherent productivity of the land." The reasons for this are evident. "Despite the cheapness of land," Higbee notes with reference to the westward movement of American agriculture, "we might long ago have reached a point where we would have taken better care of our soil had we not continually discovered new means that enable one man to do the work of two. Multiplication of labor efficiency by development of new farm implements made up the deficit caused by declining soil fertility. As men compensated for lower yields by tilling more land with better tools, profits often increased even while the bank account of soil productivity dwindled."

Unless efficiency in land-use climbs to match efficiency in capital- and labor-use, Americans will face a critical drop in their dietary standard by the end of the century. An abundance of arable soil, plus the imaginative use of machine technology, has been more than adequate for our needs. Higbee proves —insofar as anyone could prove— that this formula for abundance has all but run its course. His honest facts demand that the American people take new account of the urgent need for the soil's conservation and renewal. Eighteen per cent of the world's total of cultivated acres lie within our borders; and we are at present only 7% of the world's population—the vast Corn Belt, alone, is perhaps the most productive single agricultural expanse on earth. *The American Oasis* makes it plain for any layman that, if we go hungry, it shall be a consequence of our manipulation of Nature in a manner contrary to Nature's own inexorable laws.

> *"Western man is a meddler. That is at once his virtue and his folly—the stimulus to discovery, the invitation to disaster. To be a successful agriculturist a man must effect a partial destruction of the natural plant and animal world in order that a few chosen species may be favored by cultivation and husbandry. This involves hazard. In eliminating the naturally well adapted by substitution of something more desired by man, the farmer takes upon himself the responsibility to make the earth productive. Yet only by such initiative can a given area support more human beings."*
>
> Edward Higbee,
> *The American Oasis*

By means of incomparable lessons in geography, Higbee first introduces his reader to the three basic factors in American agriculture: the people, the climate, and the land. Then, through a series of superb regional studies, he examines the role of these three factors in the several farm sections of the nation: the deserts and irrigated valleys of the Southwest; the West Coast; the Dry Plains; the Corn Belt; the uplands from the Ozarks to New England; and the new frontier, which is the great reclaimed plains of the Southeast.

These are unique areas, bearing little resemblance to one another in the diversity of their challenge:

Southwest Desert – Spotted with wonderlands of irrigation that are threatened today by silting dams, falling water tables, and the steep

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Photograph of the holocaust that swept through the Blackwater Canyon on the Shoshone National Forest, August, 1937

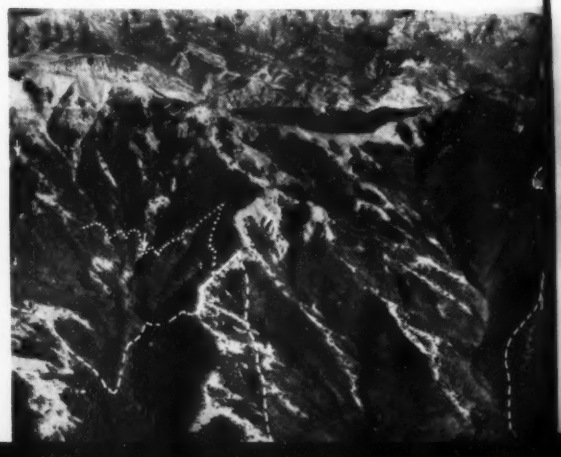
Rock Gulch (Clayton Gulch), the place where Clayton's crew was trapped—water cans and equipment in foreground

RENDEZ

By ROBERT B. MC COY

Taken in 1937, this picture is a view up East Fork Blackwater Creek across burned area, with Coxcomb Mt. in left background

Aerial view of the scene of the tragedy, which lies on the eastern slopes of Rocky Mountains, some fifty miles south of Cody



EZVOUS WITH RED DEATH

Next month will mark the twentieth anniversary of the disastrous blaze that roared through Blackwater Canyon, Wyoming

TWENTY years ago this August, the raging flames of a burning forest trapped 46 fire fighters on Trail Ridge in Blackwater Canyon, Wyoming. Thirty eight of these men survived the roaring holocaust, though badly burned; fifteen of them held in that blazing hell a grim rendezvous with red death.

Blackwater Canyon is a part of Shoshone National Forest; a rough, almost waterless country ranging from 7,500 to 10,500 feet above the sea. The great wilderness lies on the eastern slopes of the Rockies, some 50 miles or so southwest of old Cody. It is, topographically, a vast series of basins divided by bare and rocky ridges at lower elevations. Above timberline, the heights are crowned by endless rimrocks.

A sudden thunderstorm swept out of the high mountains on the afternoon of August 18, 1937. Some unseen bolt of lightning crashed out of the clouds to shatter an 80-foot alpine fir near the foot of Coxcomb Mountain. It left in the heart of this splintered forest giant a cancer of smouldering fire.

This malignant growth burned steadily in the still hours that followed the storm. The underbrush was so dry, and the air so quiet, no tell-tale spiral of smoke lifted above the roof of the forest to be seen by some watchful forester in the lookout towers.

But the flames came out of hiding and were discovered on the afternoon of August 20, in rather a routine way. Records of the Forest Service tell the story, somewhat like this, perhaps:

"Sieker, at Cody; Sieker, at Cody. This is Carl Krueger in the Cub over Blackwater. Can you hear me?"

The answer came through the static caused by hot mountains.

"I hear you, Carl. This is Sieker. What's up?"

"John, there's a small blaze headed up . . . Double Peak . . . no, wait a minute . . . Coxcomb Peak. Looks too dry to make much smoke."

"How big is it, Carl? Can you tell?"

"Not big. Maybe two—three acres. Low on the ground. Very quiet. Slow. Close to some big brush, though."

"Right. I'll get a crew on it as soon as I get some co-ordinates."

"Okay, John. Over and out."

Supervisor John Sieker at the Cody Forest Service Headquarters hung up and rang the Wapiti District Ranger Station, some 30 miles

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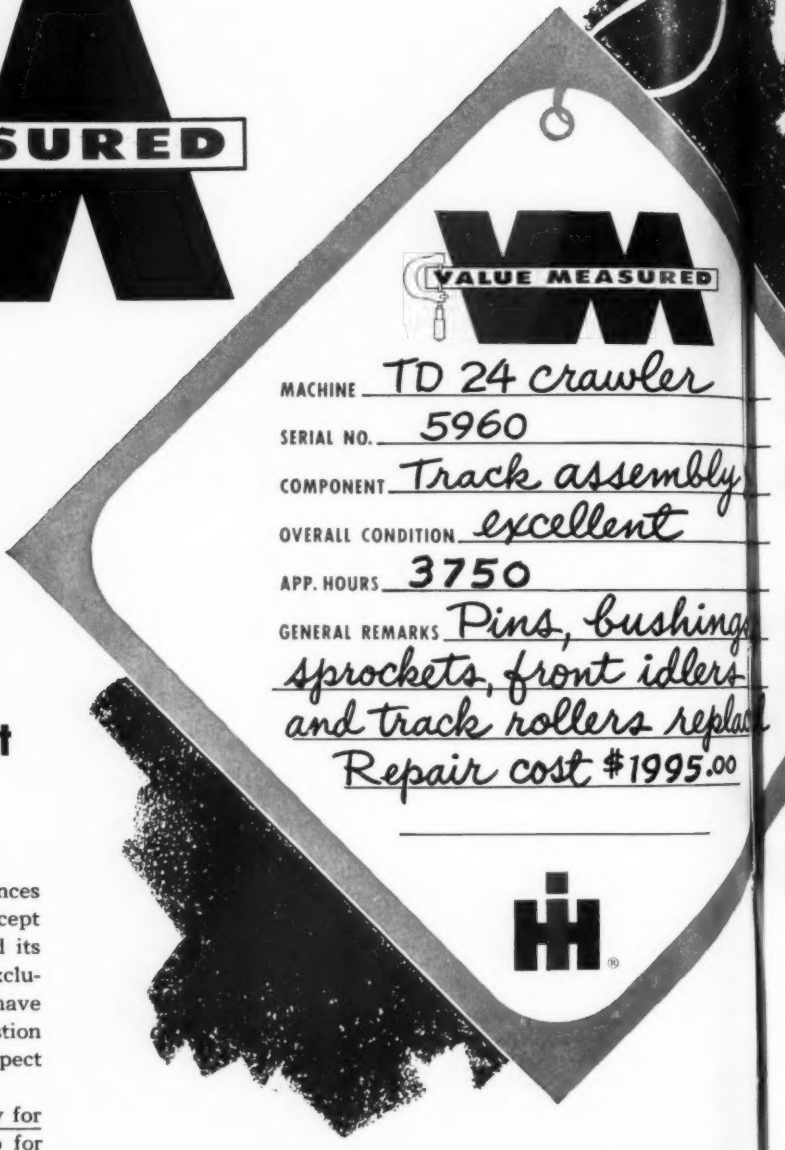

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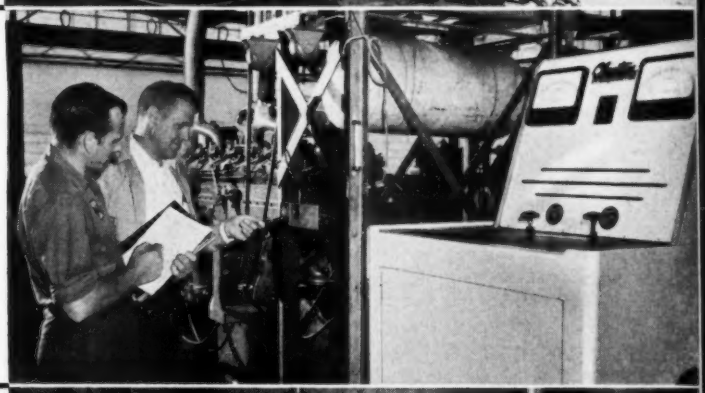

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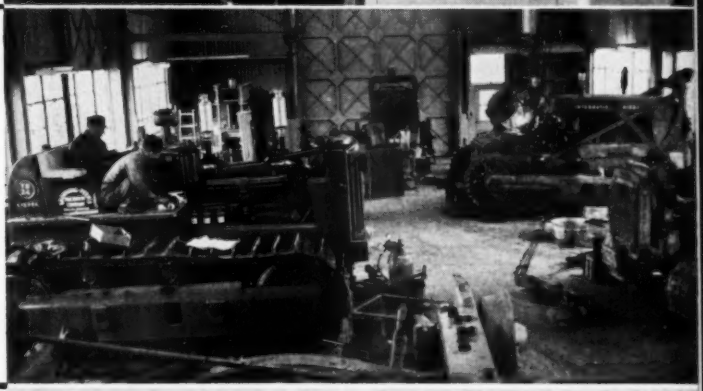

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A GERMAN FORESTER LOOKS

By WOLFGANG KOEHLER

WHEN I recently met the editor of *American Forests* magazine for the first time his first question was, "Mr. Koehler, what in your opinion is the greatest need in American forestry today?"

On the basis of recent observations made in crossing and recrossing your great country, I was able to answer that question in two words. They are, "more foresters." Probably five times as many foresters, as a matter of fact, than America now has.

However, I should hasten to add that the number of foresters that your country already has are, in the words of you Americans, "tops." That the foresters in the United States and in Germany are made of the same wood, that they speak the same language, that they have the same passion for their profession, has been proven to me time and time again in all the encounters I have had with my American colleagues, wherever I have met them and in whatever position they were working.

I was deeply touched when, a few weeks ago, at Biltmore I stood under the white pines which 50 years earlier had been planted under the supervision of the late Dr. Schenck. His work, which has not been forgotten in this country as well as in Germany and that of Fernow, which is recorded in the history of the Society of American Foresters, are unforgettable examples. I know that the leading foresters in the United States are concerned about the fact that today there are not sufficient numbers of young foresters available. *This will soon take a turn for the better, I am convinced.*

And of one further thing I am convinced: the quality of the new generation of American foresters, their knowledge, their zeal and the way in which they approach the challenge of today's forestry problems in the United States, has impressed me very much. I am sure that the future of the American forests is truly in good hands. An old German saying, which has accompanied many generations of foresters, is meant for everyone who has dedicated his life to forestry:

Der Wald ein Segen, we Gott ihn schuf,
dem Waldo zu dienen, ein schoner Beruf.

—which roughly translated means:

The forest is a blessing of God's creation
To be a servant of the forest is a fine vocation.

Now, if you will permit me, I should like to outline a brief description of the forestry situation in Germany as it exists today. The division of our country in 1945, placed a considerable part of forest land under Soviet or Polish controlled governments. That refers particularly to the famed pine areas in East Prussia, Pommerania and Silesia as well as in the March Brandenburg. About 8 million acres of pine forests are located in these provinces. According to existing reports, they have been devastated to a great extent and apparently little has been done so far in the way of reforestation. Today, the Federal Republic has over 17.4 million acres of commercial forest land, as compared to 29.3 million acres in the whole of Germany in 1937. At that time, German forests were about 70% softwood, while today the forests of the Federal Republic have only 58% softwood, of which almost two thirds are spruce.

Distribution of ownership in the Federal Republic, also an important factor in the evaluation of a country's forest situa-

Multiple use and programs involved are almost unknown in Germany.

Coniferous forests, unlike hardwood forests, deplete the soil of certain minerals after 2 or 3 crop rotations. Therefore, fertilizer is sprayed on to revitalize soils

Mr. Wolfgang Koehler, first Forestry Attaché ever appointed to a foreign embassy in the United States, was transferred to Washington in 1956 after 20 years of experience in the German Forest Service

KSAT AMERICA

tion, is as follows: One third of the commercial forests is owned by the Lander—that is the states (there are practically no forests owned by the federal government); Three tenths are corporation forests, including municipal, church and cooperative forests; Four tenths are privately owned (a considerable part of these are forests under 50 acres).

It should be noted that most of the cooperative forests are also privately owned, although they are in most cases covered by special laws which permit state control. A large forest area belonging to a considerable number of very small forest owners is always the object of special concern. As in the United States, it is a real challenge to German forest policy to educate these forest own-

ers, to strengthen their sense of responsibility and to improve the state of their forests which are to some extent in a not very satisfactory condition.

The Federal Republic is a wood importing country as was the German Reich. During a period which began about 12 years before the war and lasted until just after the war ended, an attempt was made to find a balance without imports by felling a considerably higher amount of wood. The results were large, clear cut areas up to 6.5% of the total forest land compared to a normal of one percent. Today, felling, at an annual rate of about 700 million cubic feet, and growth are in balance again. Almost half the annual cut is used as softwood sawlogs; one eighth for hardwood bolts and logs as well as for pulpwood, and the rest as pitprops. One fifth still is used for fuel wood, although the price of wood for the past several years would make production of items such as pulpwood more profitable.

One third of the Federal Republic's wood supply is imported from other countries. The largest importers are the Scandinavian countries, but substantial quantities of lumber and timber have been shipped by Austria and West African Territories as well as by France and the Soviet Union. Due to high freight costs, timber trade between the North American Continent and Germany never has reached any considerable amount. Yet in 1955, timber, half of it pulp, worth about $20 million was imported by the Federal Republic from the United States. In 1956, however, this import has somewhat decreased.

The history of forestry in Germany is very old indeed. In ancient times, after the great migrations, land was the property of all, exactly as in the United States. A particular form of common ownership (Allmonde or cooperative) of forest developed, the last remnants of which, by the way, are still in existence. Nevertheless, ever larger forest areas became the property of the great land owners after about 900 A.D.

More for reasons of securing undisturbed hunting than of preserving the forests, the land-owners soon started to enact laws restricting the use of their forests; but not until around 1500 in some areas forestry was first practiced for its own sake. The sovereigns, whose forest areas had grown considerably as time went by, were the pace-makers in this development. Their forests formed the basis for today's state forests.

A plantation of Douglasfir is used to improve this old stand of Scotch pine

The first steps toward a forest survey go back to this time, too, when some of the sovereigns began to "organize" their forests as we would put it today.

All these promising developments were stopped by the Thirty Years War. Around 1650, not only three quarters of the German population had been annihilated, but the unimaginable destruction of the country had not spared the forests, either. This epoch provides two valuable experiences which are still valid today: since as a result of the war and the loss of population, the shortage of wood, which had existed before, had turned into the opposite, and the survivors considered it unnecessary, at least to balance reforestation and cutting: furthermore, however, and this proved to be far worse, the conservation idea had been lost during this area of general distress and destruction. That was, as the future proved, much more serious than all the material losses which had befallen German forestry. Therefore it took about 100 years until, with the era of rationalism, a development started in Germany which we since have called forestry on a sustained yield basis. Beginning about 1750 the basis was laid for forest administration, forest organization, forest survey and management plans, which in their fundamentals have lasted to this day.

Shortly after 1800 also the first forestry schools were established. During this time, some of the most distinguished forest experts which Germany has produced, taught and worked — such men as Pfeil, Cotta, Burgsdorf and Hartig, to name only a few. All of them have left behind text books, the fundamental principles of which have lost hardly any of their value.

Chancellor Conrad Adenauer (l.) expressed profound views on forestry at opening of agricultural exhibition in Berlin

FOREST is far more than a source of timber or means of climate adjustment. The forest has a profoundly symbolic significance.

He who plants a tree, will not harvest its crop nor obtain its timber. Both will be given only to his children or even his grand-children. Thus forest provides the link of the past through the present with the future. He who cares for and cultivates the forest is the guardian of a genuine and good tradition. The forest can give to man working in it or taking his pleasure in it, inner strength and balance of mind in a restless and unstable age.

Heinrich Cotta, for instance, in his book *Anweisung zum Waldbau,* recognized and described as early as 1816 the close connection between forestry and soil, and more clearly than could many forest experts of today. Cotta wrote:

"Without any utilization the forest soil improves constantly, if utilized properly, the soil retains its natural balance, if utilized improperly, however, the soil deteriorates. A good forester achieves the highest yields without letting the soil deteriorate while achieving perhaps only half of the true yield."

In the meantime, we acquired a lot of experience and a high price was paid for meliorating many thousands of acres of deteriorated forest soil. That is not to say that today German foresters do not make any mistakes concerning the choice of tree species and their combination—such an ideal state of affairs can probably never be achieved. However, now our field officers also have, in addition to their management plans which are drawn up for a period of 10 to 20 years, an exact site description available which gives recommendations to each compartment regarding the choice of the species concerned.

Quite a lot of post-war reforestation has been done with regard to that new achievement. Many areas have been converted into more appropriate mixtures of species during the last 10 years.

I believe that this *practical acknowledgment of the importance of site quality* represents one of the most far reaching steps in the progress of practical forestry since the beginning of this century. Of course, mistakes can be made also in the method of planting or sowing a tree, but much more important are the mistakes which can be made by a wrong choice of the kind of trees, for these can often be detected only after many decades; and, generally speaking, the length of the production time in our profession should always and everywhere incite us to exercise particular caution. This applies particularly to Europe with her long growing periods; however, it is at the same time one of the few internationally valid basic rules.

The tremendous progress which was achieved in the 20th century in all the areas of the natural sciences, however, made its way only very gradually into forestry literature. Also the technical age reached German forestry relatively late, but now the foresters, too, are part of it. Contributing factors in this connection were not only the progress made in the construction and production of suitable machines and other equipments, but to a great extent also the development of the wage situation and the increasing scarcity of labor during the last eight years. Up to the Second World War, the wage and labor situation was very similar to that in agriculture: low wages were paid to permanent or seasonal workers who came from the surrounding farm lands and who depended largely on the wages they earned in the forest. This situation has changed basically. In solving the problems connected with this structural change, forestry can greatly profit by the experiences, made in the United States, where, due to the high costs of labor, intensification of production had to be limited to a certain point.

Space does not permit me to deal in detail with the questions of forest administration, where there are noteworthy differences between our countries. The most important of these are the different career ranks in Germany and the much higher number of employed foresters in all the career ranks. In the Federal Republic one career forester per 1200 acres of forest land is the average; and of these every sixth has had academic training, while the rest have attended ranger schools. And I should like also to mention only briefly that in most of the larger forests all work connected with felling, reforesting, road construction and maintenance, stand improvements, etc., is performed by workers em-

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ployed by the forest administration, rather than by contractors. Therefore, the stumpage of the two countries can hardly be compared. A small example may illustrate this: To fell one cord of pulpwood, one must spend approximately the same amount in the United States and Germany ($7.50 and DM 30 respectively). The forest owner in the United States will get for his wood, under most favorable circumstances, about $5.00, while the German seller will net a profit of about DM 80 to 100, depending on the quality. Therefore, German forestry today is in a considerably stronger economic position than that of the United States. This is also because forestry in Germany is generally much more commercialized than in the United States with a market even for wood of relatively small size and poor quality. Multiple use and the programs involved are almost unknown in Germany, with the exception of wildlife. There can be no doubt that a forest managed under the multiple use principle makes great sacrifices in profits, since most of the other benefits cannot be accounted for in dollars and cents. I think that I can say, therefore, that a great number of the most noticeable differences in the management of commercial forests of the two countries may be due to this point.

Forestry of all industrial countries will have to cope in this century with the question of whether *they should plan in the long run to retain production of quality material (which, as a rule, will require sacrifices as far as increment is concerned) or whether they should put emphasis on mass production.* The development of modern manufacturing methods, which utilize the fiber of the wood rather than its structure, as well as the ever increasing consumption of paper and paperboard of all sorts could favor this. Nevertheless, intentionally no conclusions have been drawn in this respect in Germany. In this country, too, I have not found any indication of a basic change regarding this. And I always enjoy here noticing the care which is applied to good finishing of all exposed woodwork in houses, such as paneling, ceilings and stairs, floors and doors as well as furniture. I believe however as mentioned before, that we cannot avoid this decision in the long run, and I could imagine that the production of dimensional and quality products will be limited later on to certain areas with optimal growing conditions. That will probably be up to the state-owned forests within the framework of the wood production in general, based on the principle of division of labor. This is done today in Germany with respect to the production of veneer oaks with a rotation period of 300 years.

Since I am now talking about problems which will have to be solved in the United States as well as in Germany and where an exchange of experiences and research would be useful, I would like to mention very briefly some other subjects as well. In both countries forest plant breeding and forest genetics are as yet in their early stages. In both countries work in this field first started in the twenties when it was realized how important it is to have high quality seed suited for the particular site concerned. After the war the first seed orchards were started, based on Swedish experiences. For selective breeding as well as for hybrid breeding by changing the sets of chromosomes, the research needs a good deal of reliable material in the first place. An exchange of such material will save time and thus produce earlier results which are applicable in practice. Recently I learned from a report about the development of these efforts in Sweden that even there it is estimated that a period of 12 to 15 years will be required before the new seed orchards will start producing seed in any considerable amount.

The selection and breeding of trees for disease-resistance is another important field in which an exchange of basic information would be helpful and desirable.

In quite a different field I also found a considerable similarity in problems—I refer to the question of forestry and wildlife. Although we in Germany realized long ago that it is in the interest of wood production as well as in that of a healthy wildlife population to keep the latter relatively small, we have not yet succeeded in carrying out this theory in practice. I have heard the same complaints about too large a wildlife population particularly in the Northeast of the United States, where my findings concerning its disadvantages for the game itself and for the forest were confirmed. No real forester will ever suggest extermination of the game. But just if one wants to avoid this, a way has to be found to limit its numbers and the areas of habitat. I would like to add that because of the size of your country it should be easier to come to a compromise here.

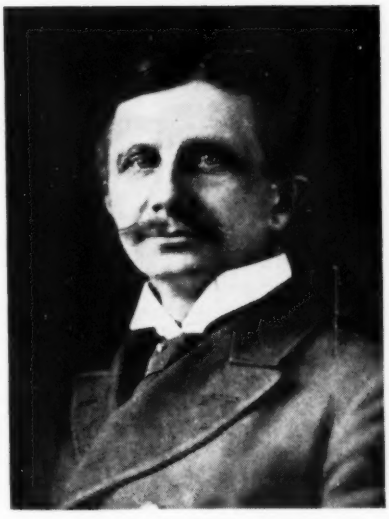
We have of course quite a few problems in common as far as forest products

First commercial thinning operation in spruce stands that are about 25 yrs. old

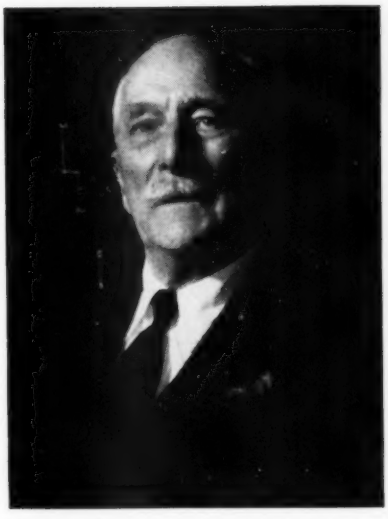
research is concerned. I shall just mention cellulose and the introduction of the semi-chemical process which enables us to develop and economically utilize certain species of hardwood which until then could not be put on the market. Moreover there is the fiber and particle board industry which I have mentioned before.

German forestry watches with great interest the large-scale experiments for the chemical control of hardwood in areas where softwoods, particularly pine, should be preferred for economical reasons. On the other hand, forestry in the United States can profit from the decades of experiences which we have had in Europe in the field of thinning—its economic and technical advantages. Even if forestry in the United States has to deal with 16 different pine species, as compared to Germany's one, I have nevertheless gained the impression that the large majority of American pines ecologically can be compared with the scotch pine. The same may be true for the various species of spruce, for Douglasfir, as far as second growth is concerned, and probably also for a considerable number of Eastern hardwoods.

To talk about intermediate cutting in Germany means to touch on a vital problem of that branch of forestry which we call "Waldbau." This is translated as "silviculture" — an adaptation of "agriculture," but that does not exactly describe the process. "Waldbau" means to balance natural conditions and economic necessities when establishing and caring for forest stands so as to achieve the highest possible productivity, while at the same time preserving the natural productional factors, that is, primarily, soil. That means, in other words, to aim for a synthesis of cultivation and natural growth in the forest—whether it is really possible to find it, I shall leave unanswered. Hence my reservation about the word silviculture. Dean Baker of Berkeley in his article in "Fifty Years of Forestry in the U.S.A." has given a definition for silviculture which, I believe, concurs largely with what I have in mind: It is that part of forestry, he points out, which rests upon biology and other natural sciences and is concerned with the production of successive crops of trees. And he continues: "Silviculture must always be an integral part of forestry." In conclusion, Dean Baker declares that the first fifty years of forestry history in the United States have produced few silviculturists, and he explains, this probably correctly, by the fact that as yet only a few qualified foresters have had the good fortune to work long enough in a district to acquire sufficient experience; and that furthermore the old saying is still valid, which old Cotta in Germany originated in 1816: "The forester who practices much writes but little, and he who writes much practices but little."



Prussian-born Bernhard Fernow, strove to conserve forests of North America



German forester Dr. Carl Schenck, who founded first forestry school in U. S.

This points up, so to say, another problem which we have in common and which cannot be taken too lightly. One of the few men who were practicing foresters, teachers and writers at the same time, the late Professor Olberg, said in his work "Intermediate Cutting in Pine Stands" about marking: "The work of marking was always a pleasure, for who would want to call himself a forester who would not be filled with highest satisfaction at being able to shape a forest stand according to his own ideas and plans." This statement may give you an idea that from our viewpoint intermediate cuttings are an integral part of any "Waldbau" practice. And, therefore yield science is also closely related with modern silviculture. Lastly, soil science and forest ecology as well as plant sociology became more and more almost integral parts of silviculture, just because of the realization that any forest production is inseparably connected with the kind and quality of the soil, and generally, with its surroundings, including climate.

Doubtlessly it is much simpler in a country the size of the Federal Republic (area 95,000 square miles) to make an inventory of forest and soil and to develop management plans accordingly. But this, too, as so many other things, is rather a technical and organizational than a scientific problem. And I think that there are some very encouraging beginnings, for instance in the development of ever better methods of aero-photography. In this regard, the "Timber Resources Review" of 1956 represents a milestone in inventory with the assistance of aero-photography. This frame-work can and probably will now be filled in regionally by more detailed surveys, so as to disclose the required information on other productional factors as well. The utilization of aero-photography in forestry, is by the way, also one of the fields in which German foresters can learn much in the United States. I hope that in the course of this year one or two German specialists will come here to study this subject in detail. For such a visit is of great importance. As a German forestry professor told his colleagues two years ago on his return from the United States, "One can save years as a researcher and college teacher by going to the United States." On the other hand, however, I should also like to repeat a statement which an American professor made to me when I asked him about the impressions he received in Germany. "In your country," he said, "the real meaning of the word 'Waldbau' became clear to me for the first time."

Since the time when I first came to this country about four years ago, or let me rather say to this continent, I have had the rare opportunity through the great kindness of all the American foresters whom I met to see much of your work. After a first and rather general impression of forestry in the North and South, I returned to Germany for 2½ years. This gave me a chance to make comparisons, before coming here again for a longer period.

As you know, some of the most important kinds of American native trees for decades have also proved their usefulness in our country. These include the Douglasfir, sitka spruce, western red cedar, western hemlock from the Pacific North-

(*Turn to page* 54)

Rendezvous With Red Death

(*From page* 35)

south. The time was 3:40 in the afternoon.

Wapiti station came on the line. "Charlie Fifield, Wapiti. Hello."

"Charlie, John Sieker at Cody. Carl Krueger just radioed in from the Cub that there's a small blaze in Blackwater Canyon, just at the foot of Coxcomb Peak . . . wait a minute, here's a report from Pahaska Tepee . . . smoke reported at coordinates R-107-W; T-49-N. Better get a crew out there. On the double."

Forest Service records show that Ranger Fifield arrived at the scene of the fire at 5:10 that afternoon. He had covered 13 miles of old logging road and unused fire trail in an hour and eighteen minutes. On foot.

By 8:00 that night, 58 men from the Wapiti Civilian Conservation Corps Camp had arrived with picks, shovels and shoulder tank pumps. Sieker had sent six other available foresters from Cody and Wapiti to help Fifield.

The fire was burning leisurely at this time, on a low level in a dense stand of big Douglasfir. The general direction was up, toward Coxcomb Peak, north-northwest; its rate of travel about two miles per hour.

By 9:00 that night, Supervisor Sieker himself had arrived, and with Ranger Fifield had scouted the outline and potentialities of the blaze. They stood together on a bare ridge above and to the south of the flames, trying to see the best way of attacking the fire in the darkness.

"Charlie," Sieker said, "if the fire gets into that basin over there, we're going to have real trouble." He pointed toward one of the forks of Blackwater Creek, a valley he knew to be filled with low, crowded Engelmann spruce and a higher elevation of heavy Douglasfir.

Fifield agreed.

"But we'll be all right, I think, if it doesn't get windy."

"How big do you estimate it now?" Sieker asked Fifield.

"I'd say about 200 acres."

"Firelines drawn?"

"Yes, sir. We've got her tied down right now. Won't be under control by morning, though, and there ought to be a strong breeze come up the canyon about then. Maybe a wind. I'd say we ought to have more help.

"My idea, too, Charlie. Go ahead. It's your baby."

By field telephone from the fire to Wapiti station, thence by relay to all the nearby CCC camps, the Forest Service S.O.S. sped through the night. Men were aroused from sleep to answer the call. From camps in Yellowstone, Tensleep, Deaver and Bridger, even from farway Jenny Lake, the men tumbled sleepily from their bunks and climbed grousing into the trucks to start the long trip. Four hundred and twenty seven were soon on their way, each group with foremen and supervising forest technicians.

And while the night wore on, the winds came gently and blew strong breaths into the heart of the fire. The blaze leapt into life and started moving northwestward.

Ranger Fifield met this threat from the fire by a line of felled trees and trenches about two miles long —all the way from Blackwater Creek up the canyon to the bare and inhospitable Trail Ridge, just below rimrock. By morning, as fresh crews began to arrive, the line was still containing and the fire had somewhat dwindled.

All during the morning of Saturday, August 21, new crews as they arrived were sent out by Ranger Fifield to relieve tired crews; to expand and extend the fireline — to make it bigger and deeper; to connect up local spot fires while they still were small enough to handle.

About noon that day, Asst. Superintendent Carl Krueger again flew down from Cody in the Cub for an aerial reconnaissance. By radio he reported to Ranger Fifield, who by now had established a command post with portable radios and field telephones.

"Charlie Fifield. Charlie Fifield. This is Carl Krueger. Can you hear me, Charlie?"

"I'm here, Carl. What can you see?"

"Lots of smoke heading north-northwest, Charlie. Lots of wildlife running around, deer—several bears. We're circling right now over a pair of spot fires, Charlie. We don't see anyone around them. Can you see the Cub?"

"Wait a minute, Carl . . . yes, now I can see you."

"Do you know about these spots?"

"They're new, Carl. I'll get a crew down there right away."

"Charlie, it's bumpy as hell up here. Looks like a big draft is building up. We're above Trail Ridge rimrock right now, and brother . . . is it . . . rough!" There was static for awhile. Then: "Charlie. Looking out to the south, here, I see a lot of trouble coming your way. There's wind. A lot of it. Maybe rain, but I doubt it. Just wind. Definitely. Better dig in quick."

"How far away, Carl?"

"Charlie, I'd say you've got — at best — a couple hours. Maybe not that much."

Ranger Fifield put Ranger Alfred G. Clayton, from nearby Washakie National Forest, in charge of one group, and Ranger Urban J. Post, from the Bighorn National Forest, in charge of a second group. Both rangers were veteran fire fighters, and their mission here was to extend the control lines further in anticipation of the oncoming winds.

Ranger Post took Junior Forester Paul Tyrrell and a 51-man CCC crew from the Tensleep camp and started up toward the anchor point on Trail Ridge. Ranger Clayton followed a few minutes later with Ranger James T. Saban and a crew of six. These two crews quickly found and controlled the spot fires reported from the Cub.

At about 3:00 o'clock, Ranger Clayton on patrol down his section of the fireline ran into Ranger Saban and a forest technician named Rex A. Hale. With them were six CCC men. The men all talked for awhile, finding reason for some guarded optimism. While they were talking, one of the CCC enrollees pointed out to Ranger Clayton a tendril of smoke from an apparently new spot fire in a basin about a mile down the canyon.

Ranger Clayton spoke to a young CCC enrollee as he began hurriedly scribbling in his notebook. "What's your name there, son?"

"Assistant Leader David Thompson, sir. Tensleep camp." the youth replied.

"Dave, take this note over to Ranger Post. He's right down this line about a mile. This is to let him know the rest of us are going after that spot fire—tell him to keep an eye peeled just in case."

"Yes, sir." the boy wheeled and loped out of sight down the smoky forest path. The eight men turned, and in single file behind Ranger

Clayton, they went down into the basin for their grim rendezvous with red death.

At 3:30 o'clock, a sudden squall heralded the arrival of the winds; they came sighing and rustling through the forest like some ancient evil spirit. The orderly flames drew sudden wild life from the fresh air, and leapt with a roar into the boughs above. By 3:45 o'clock, the heat from the blaze combined with the updriving drafts made a great series of chimneys out of the uplying canyons. In a series of giant explosions that rocked the earth, the fire roared into the treetops and began crowning.

In a fury of flame and smoke, the blaze turned into a cyclonic sheet of fire which sped with appalling speed and force through the dense trees. In a few disastrous moments the red monster had blasted out of the now-puny control lines and roared upward through the basin toward Trail Ridge rimrock. Every canyon, every gully, every ravine became, in effect, a force-draft chimney for the rushing, roaring, bursting fire.

The rangers called retreat, and they and the CCC enrollees began a wild race for life up the forested slopes toward the bare heights of the rimrock above timberline. Over their heads raced the crashing, exploding, crowning flames. Thirty-eight desperate, exhausted men were close to safety when the fire roared to the timber floor ahead of them — between them and the bare rocks above timberline. The men, following blindly behind Ranger Post, stumbling, crying, praying, coughing — barely able to breathe, some with clothing afire, ran finally onto a rockslide itself bare of trees but surrounded by them.

One by one, the smoke-blackened, red-eyed, terrified men crept onto the slide, fearing death by avalanche or fatal slip of footing, but even more fearing death by the flames.

In a blistering wave of almost solid fire, a great sheet of heat roared out of the trees and over the rockslide. The men dropped to their faces, burying their nostrils among the rocks of the slide. Junior Forester Tyrrell threw himself across three of the younger CCC boys, trying to force them to hug the rocks and the earth. All of the men were badly burned as the fire flashed across them the first time, but none critically. But the blaze came back again in a few minutes.

"The wind was blowing away from us after that first time," one survivor, John Touchstone, testified later. "And then, all at once it changed and whipped the flames right back over us again."

Ranger Post wrote later in his report: "Between the two flame crossings, there was momentary panic. Some of the men got up and ran around screaming, praying, looking for some way through the wall of fire on all sides . . ."

"Five of them," said Asst. Leader David Thompson in his deposition, "dashed right square into the fire, thinking, I guess, to break out quickly on the other side. Maybe if they had stayed with us, they would be alive today."

For three dreadful hours the burned and blackened surviving 34 men clung flat on the rockslide slope, surrounded by an inferno that threatened death with every fresh burst of wind.

By sundown the fire had consumed itself and was dying. Rescuers quickly reached the men on the slide.

Forest Service records say that the lives of 36 men were saved that awful day by the experience and personal heroism of Ranger Urban J. Post, Junior Forester Paul Tyrrell and CCC Foreman Bert Sullivan.

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Reading About Resources

(*From page 33*)

cost of new water management.

Pacific Coast — Farming is intensive, expensive and specialized to the south, while in Oregon's Willamette Valley is a resource on the eve of new expansion.

Dry Plains — The risks are great, and cropping may yield to rangeland agriculture.

Corn Belt — Profits despite soil destruction must soon become profits because of soil reconstruction.

Old Frontier — Increasing pressure from cities, industries and highways upon the eastern uplands is changing both the importance and production of America's first general farms.

New Frontier — Cheap land and abundant water in the southeastern flatlands, plus yesterday's bitter lessons, give promise here of mounting agricultural boom.

Moving thus from western deserts to humid eastern tidewater, *The American Oasis* lays out the pioneer past, and projects the problems and promise of American agriculture for every reader.

Despite this accomplishment, two omissions by the author concern me. In the first instance, whenever he confronts the depletion or threatened depletion of the soil, Higbee urges recourse to the popular land management philosophy that relies heavily upon "chemical weed-killers and superfertilizers," without noting, as he might well have done, the dangers inherent in such a reliance upon an industrial complex for support of agriculture. This relationship between farm and factory is sharply drawn in Harrison Brown's brilliant book, *The Challenge of Man's Future.* Having read Higbee, it might be well to go on and read Brown. When agriculture becomes wholly dependent upon processed chemicals for its good health, the collapse of industry—for any one of a dozen possible reasons—would mean widespread starvation.

Each year our farms will use increasing quantities of chemical products—Higbee's data appear to demand this course. But in pursuing the golden promise of science, it would be well for us to know the risk we run. There is no historical evidence to indicate that the chemical industry is eternal.

As for the author's second omission, *The American Oasis,* when it treats of forests at all, does so for the most part in meager terms of their function as ground cover. Of course, Higbee understands the prominence of wood-products in our economy, and is aware that the future of this resource rests largely upon the disposition made of the farmer-owned forest tracts which comprise 50%-plus of our merchantable timber. Yet nowhere does *The American Oasis* spell out this basic challenge facing the farmer, or explicitly accept proper woodland management as an urgent agricultural responsibility.

This is unfortunate, if for no other reason than that the U.S. supply is scarcely in balance at the moment, and farmers themselves will determine ultimately in which direction the growth-to-cut ratio will tip.

Here was an unequalled opportunity to argue for the integration of forestry and agriculture as inseparably related sciences. That Higbee threw away the chance to do so would be of little concern, were not his book so excellent in other respects, and hence important for years to come.

NEW AND IMPORTANT

Atomic Energy Applications with Reference to Underdeveloped Countries, by B. C. Netschert and S. H. Schurr (Baltimore: The Johns Hopkins Press, 1957. $2.00).

Prepared by staff members of the Ford-financed Resources for the Future, Inc., this is a readable survey of the potential role of atomic fission in energy-poor areas of the world — a fundamental reference source for natural resource specialists, particularly those with overseas interests.

> *"Archery holds much more than the mere promise of a carcass in the deep freeze or the thrill of telling the boys at the office about the spike buck you bagged. Bow hunting is like enjoying a secret fraternity where Mother Nature is the lodgemaster and everyone is on his best behavior lest he be expelled from this delightful inner circle."*
>
> Anthony Lane,
> *Outdoor Horizons*

Christmas Trees for Pleasure and Profit, by Arthur G. Chapman and Robert D. Wray (New Brunswick: Rutgers University Press, 1957. $3.75).

Through a period of years I have collected a file full of literature on Christmas tree plantations—all of which can be thrown away since this book has arrived. Chapman and Wray have told prospective Christmas tree growers everything they should be *told;* the rest they can and will learn only by experience.

Outdoor Horizons, edited by Lawrence M. Brings (Minneapolis: T. S. Denison & Co., 1957. $7.50 cloth, $10.00 deluxe).

Outdoor Horizons has neither the unity of a well-planned book nor the useful diversity of a true encyclopedia, yet Editor Brings has compiled in scrapbook-fashion a collection of essays which every rod-and-gun sportsman could enjoy — but probably won't, because of the price.

This is definitely in the gift book category; its layout is self-consciously pretentious. Yet the many photos are commonplace to poor, and the twelve earnest paintings by Roger Pruess will only satisfy the reader who has seen nothing better—in fact, even Mr. Pruess' black-and-white engravings, of which there are some excellent examples here, are better.

What *Outdoor Horizons* lacks in visual taste it makes up for in the quality of its contributors, many of whom are tops in their fields. Except for a few weak and extraneous pieces, their offerings are fit to be studied by even the most knowledgeable sportsman. Duck hunters in particular will find meat here.

As a $1.50 paperback, with few if any illustrations, this collection would have been sensible and, I suspect, very popular.

Glory Days of Logging, by Ralph W. Andrews (Seattle: Superior Publishing Co., 1956. $8.50).

Another expensive book, but one whose fascinating photographs warrant every penny of the price. The text is an amusing hodge-podge of loggers' yarns, but the pictures are of great historical significance, an invaluable record of those lost days 50

years ago when the Northwest Coast was a timber frontier.

The Living Sea, by John Crompton (New York: Doubleday & Co., 1957. $3.95).

This is the story of what lives in the sea, its evolution and its ecology. Lacking the stylistic beauty of Rachel Carson's treatment of the ocean itself in *The Sea Around Us, The Living Sea* has the advantage of intriguing anecdotes which amuse with a sense of wonder. I can recommend it as the best of "parallel reading" to every student of natural history, whatever his own field.

Needed: More Access Roads

(*From page* 15)

clusively, in my opinion, that when an expensive road had to be constructed to open a block of timber for harvesting, the government lost more than the cost of the road; it lost much of the spirited bidding which could have been otherwise expected, because only a large operator could afford to bid—the smaller operators had, in effect, been "frozen out."

Only a few days ago, Senate Appropriations Committee expressly indicated, through language placed in the Forest Service fiscal 1958 budget, that a close and continuing study should be made.

The committee has directed the Forest Service to produce copies of all 1956-57 timber contracts in which it was necessary for private timber operators to construct access roads before the timber could be cut and removed.

The Appropriations Committee is interested in determining exactly what mileage is being built by direct appropriations — over which Congress has direct control — and what mileage is being built outside the Treasury — beyond the control of Congress.

In reality, both those roads built by government and by private operator are being built with government funds because the private operator merely reduces his bid price until the cost of the road construction is covered.

Out of this study, or "investigation," perhaps an equitable means can be found to build the badly needed network of durable, workhorse backbone timber access roads which finally can give the small timber operator an equal opportunity to compete.

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An Indian Talks Back

(*From page 4*)

French, Scotch, Italian, Spanish, German, Dutch, Portuguese and Irish.

These people have attended public schools since 1927. There are teachers, clerks, CPA's, dentists, Linotype operators, small businessmen, farmers and stockmen among these people who are scattered in eighteen states outside of Oregon, Hawaii and Alaska. Young men and women are on the honor rolls in universities and colleges.

On September 22 and October 20, 1951, the Honorable George W. Malone, United States Senator from Nevada, spoke in the Senate of the United States in support of S. 2726, 81st Congress, which he had introduced on October 17, 1949. He was supported in his remarks to make the Indians full citizens of the United States, by Senator Wayne Morse of Oregon, at that time a Republican, with these words:

"For the past several years the senators from Oregon have had pending before the Senate a bill which we introduced at the request of Klamath County government officials and representatives of other groups in that section of Oregon, urging that the reservation be liquidated; that the economic and financial rights of the Indians could best be protected through liquidation; that adequate guarantees could be provided to insure that the spendthrifts among them, if there are any, would not be able to dispose of their property on a fly-by-night basis; that it would be a great service to the Indians themselves, and that such a move would certainly carry out what I think is the objective our government should have had in mind during the past decade, and that is to issue a real Emancipation Proclamation for the Indians of this country. We have not yet been able to get action on the bill. But knowing something about the problems of that particular reservation and tribe, I desire to say that the Senator from Nevada is presenting a case this afternoon which deserves the early consideration of Congress; because I am convinced that one place where we can save millions of dollars—and the saving certainly is needed—at least in streamlining the Bureau of Indian Affairs until such time as it can be completely liquidated."

On December 15, 1952, under House Resolution, Union Calendar No. 790, 82nd. Congress the Interior and Insular Affairs Committee, House of Representatives released a compilation of finding of fact on all Indian reservations in the United States. With specific reference to Klamath the report reveals: Officials of the local, county, city and state government felt that the Indians should become full citizens; local white businessmen also felt that the maintenance of the separate administration for the reservation was harmful to the community; present tribal council was really dominated by the Bureau of Indian Affairs, and the latter sponsors resolutions and puts into effect those which it wants. No free elections are held on the reservation. The Indian Bureau is using up the resources of the reservation and its capital reserve through bureaucratic wastefulness. The acreage of timber and grazing resources have decreased tremendously under bureau administration without corresponding return to the Indians. Liquidation of ponderosa pine resources has been going on for 35 years. The theory that the Indians are incompetent to handle their own affairs is fostered by the Indian Bureau in order to further their own purposes. The Indian Bureau has its own stooges in the reservation who oppose any change which might make them lose their soft jobs. The Indian Bureau approves of certain selected attorneys to represent the Indians. They are not truly representative of the tribe because they have to "stand in" with the Indian Bureau to secure their appointments.

There are a few incompetents in the tribe, but no more than would be found in a comparable group of non-Indians. At the present time, due to the system of open elections and the impossibility of securing a secret ballot, it is political suicide for any Indian to oppose the Indian Bureau openly at council meetings. If a secret ballot were permitted, a large majority of the Klamaths would vote for immediate liquidation. If the Klamath young people are ever to assume full citizenship it will have to be now, by full liquidation of the reservation. So many bureaucratic rules and regulations hold the Indians down that without change he can't possibly strike out on his own. The present Klamath Business Committee is handling matters arbitrarily, which is in reality only a mouthpiece of the Indian Bureau. Present set-up is Communistic in tendency and emphasizes collective enterprise at the expense of individual enterprise, the American way. In former times when the Klamaths had more freedom, their credit was good, and business was carried on by individuals whose names were respected. Since then, government enterprise has come to interfere more and more with Indians doing any individual business.

Is it any wonder that the statesmen in our country stood up and did something about this shocking record of bureaucracy and decay, which sounded the economic and social death knell of a people?

On April 13, 1953, the 47th Legislative Assembly, regular session, Oregon Legislature, approved House Joint Memorial No. 4, introduced by State Senator Phil Hitchcock, and Representatives Semon and Geary. This memorial particularly provided for final settlement of shares in the tribal estate and assets. And, on August 1, 1953, House Con. Res. 108, 83rd Congress, 1st session, set forth the policy of Congress to end wardship status of Indians and grant to them full citizenship as rapidly as possible.

P.L. 280, 83rd Congress, 1st session, approved August 15, 1953, provided for state jurisdiction, "with the consent of the Indians, in the states of California, Minnesota, Wisconsin and Oregon (excluding the Warm Springs of Oregon) with respect to criminal offenses and civil causes of action committed or arising on Indian reservations within such states." Shortly thereafter the Klamath Indians in General Council "consented" to the law by resolution and are subject to all the state laws.

P.L. 587 was enacted August 13, 1954, and provided for termination of federal supervision "in no event later than four years from the date of the passage of the act."

The law was jeopardized from the start. The Secretary of the Interior delayed nine months, to May 1955 in appointing management specialists. The management specialists delayed nine months, to February 17, 1956, in entering into a contract with appraisers to appraise and take inventory of the resources and assets; and, gave them one full year, to February 17, 1957, to make the appraisal.

Sec. 19 of the contract violated the spirit and the letter of the law which implemented the specialists with undue authority to suggest amendments to the law. Congress had not dictated any such implementation. Over the protest of the Indians in General Council, a monthly salary of $1,000.00 each, plus all expenses, paid with tribal funds, was imposed upon the Indians to pay the management specialists. The committee the Indians had elected three times by secret ballot, to represent the equities created by the law, at the discretion of the secretary, was discarded by the Bureau of

Indian Affairs and thrown into the scrap heap. The Indian Bureau then returned to the Executive Committee for "consent" to carry out the machination to destroy the effective termination date and amend P.L. 587.

Thus eighteen months of the precious four year period were wasted, insofar as forceful action was concerned toward enforcement of the act. In the meantime, the specialists, according to the record, engaged in policy making procedures, gave interviews and made recommendations which were not within their prerogatives. The record reveals they did not devote full time to the work, while enjoying a salary of $1,000.00 per month. Two of the specialists continued to live in their respective homes at Lakeview and Salem, Oregon, on full time salary. They cooperated with the chairman in Klamath Falls by telephone. A total of $125,000 (tribal funds) was deposited in the First National Bank, Klamath Falls to the credit of the management specialists without benefit of review by the General Accounting Office, but rather directly to the Secretary of Interior. The law provided for "qualified management specialists."

The testimony of T. B. Watters, chairman of the management specialists before the Subcommittee on Indian Affairs, Interior and Insular Affairs, House of Representatives, 85th Congress, 1st session, February 11, 12, 13, 1957, on various bills to amend the law reveals: Mr. Phillips had resigned from the board in May 1956; Mr. Eugene Favel cooperated with him by telephone, so the burden was placed on him, which he "accepted." According to his testimony about qualifications, Mr. Watters went to Klamath Falls in 1912, from Nebraska. There he laid brick for two years, then worked on a farm and later purchased one. He moved into Klamath Falls in 1925 and became mayor in 1927, serving in that capacity for two terms. He is now engaged in real estate and insurance. What did he know about the forests and management and appraisal? Had he ever had any work in the forests? His answer, page 60 of the hearing:

"No. I made the statement, and it is a matter of record, so I might just as well repeat it, that when the Indians questioned me about my ability, or whether or not they wanted me I was asked if I knew anything about timber, and I said I had lived alongside the reservation, the timber stand, there, some 45 years, and about all I knew about timber was the difference between a pine tree and a fir tree."

Instead of successful industrialists and financiers to manage and terminate the valuable trust estate under the law, the Indians were saddled with a real estate agent, a timber broker and an automobile dealer.

February 17, 1957, was the contract date for completion of the appraisal. When that date arrived, an extention of 45 days, to April 2, 1957, was granted the appraisers. A second extention was granted for 30 days to May 2, 1957. The law provides: "Immediately" upon appraisal the Indians are to elect to withdraw and become individuals, or remain in a group. On June 2, 1957, the appraisal was not in. Delay drags on! In the meantime, every avenue of propaganda is being exploited to persuade the Congress into enacting S. 469—a creature of falsehood, which was dashed through the Senate without proper hearings.

The only fair, logical, American way to settle the Klamath estate, is sale of the property for cash, to the highest bidder. The day of buncombing the public about illiteracy of the Klamath Indians was exploded ten years ago.

If the 590,000 acres of timberland continue under the administration of the Bureau of Indian Affairs, the Klamath Indians WILL be paupers, insofar as their undivided estate is concerned.

The bureau tax for administration is more than one-half million dollars each year. The annual $800.00 per capita dole to the Indians cannot continue after 1961, because the volume of commercial

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timber will not be there. The tax and the dole are receipts from log sales in the virgin stand of yellow pine timber, which has dwindled to less than a billion feet under bureau management.

The Klamath Indians are financiers of the highest degree if they can maintain an existance on $800 a year—with the present cost of living in this highly competitive society.

No successful argument can be advanced that sale of the property to the highest bidder for cash will not ultimately result in a stabilized economy for both the Klamath Indians and the Klamath Basin. The timber industrialist of today is fully cognizant of the need for conservation of the forest and the watershed.

Since we know there are purchasers, who will agree to "sustained yield" management, if purchase of the entire 590,000 acres of timberland is permitted, it is maladministration of the rankest type to prevent the Indians from obtaining a sizable capital return on their heritage, which will provide an appreciable sum of money to invest in their businesses, farms and stock ranches.

The $40,000 estimated per capita equity will be invested for the minors at 4 or 5 percent interest, a guarantee for an education from interest from their own funds. What is wrong with that? It will forever close the mouths of the propagandist—that the Indians are uneducated. If these propagandists were honest, they would be the first to admit total failure of the bureau system, since they weep and wail that the Indian is still uneducated. The propagandist, if he were honest, would be the first to join the ranks to settle the estate, to enable the Indian owners to benefit from interest on re-invested capital, instead of continuing to be victims of bureaucracy and freebooting; and victims of the dole system from sale of logs which eat up the capital assets.

Not one log should be marketed in the virgin stand, until disposition of the entire resource is accomplished.

Canned Duck Calls on the Pan

(*From page* 8)

are convinced its extended use could lead to a massacre of the duck and geese population.

This is vigorously denied by Perry Wightman, of Easton, Maryland, one of two manufacturers of the device. "It's good," he admits, "I haven't been an electronics engineer for 40 years for nothing. But it's no threat to the species providing wildlife officials enforce the bag limits. That's the big hitch in the bird problem—that and the fact that millions of dollars from license fees aren't always used to best advantage.

"Three years ago, I decided I would try to develop a call that would help the 'little guy' who likes to hunt. It seemed to many of us on the shore that the big landowner had things pretty much his way when it came to hunting. Since that time I've manufactured 325 sets. I call them 'Call of the Wild' and they retail at about $175. Quite a few small hunters went together to buy the thing. Some pretty big people have either purchased or used it too; and who they are may surprise Secretary Leffler when he looks into it—generals, congressmen and the like. In fact Arthur Godfrey thought so highly of it he gave it a 10-minute plug on his program and extolled the fact that the device is drastically cutting down on the number of cripples. As a matter of fact, the Forest Service must have thought well of it when they used one of the sets to have Smokey Bear show a young boy how duck hunters got their bag limits on a television short.

"Now they may try and run us out of business, despite the fact that I've been a hunter and a good sportsman all my life and my boys are too, and we all believe in the future. But they ought to look at all the facts first. To begin with, it requires skill to operate one of them—you just can't turn it on and expect to get results. If you play it too loud, it scares the geese away. Also, the law of compensation works with this the same as everything else. The old geese get wise to them mighty fast. The young geese get fooled pretty often but the old geese wise up very quickly. But in addition to that, it has other uses. It's very effective in luring crows which as everyone knows are a menace. It can be used to lure birds away from farms and that's a real problem down here. And for my money it's better than the skyrockets and what not that the service doles out to the farmers to scare them off. And it's certainly better than having some farmer sent to the 'pen' because he got sore enough to poison some of the birds in self defense. Then too, this can be used for all sorts of outdoor programs and things of that sort. It's my belief, that they can't outlaw my invention without outlawing every other kind of call including decoys. Sure, mine's better, but am I going to be penalized for perfecting something new? They ought to look at all sides of this before they jump. Yes, give me some time to do a little research and I'll clear out the starlings in Washington too. This thing is good."

Just the same, many wildlife technicians are taking an exceedingly dim view of Mr. Wightman's invention. They say it is so technically perfect it can be used to move ducks and geese about almost at will. For example, some refuges attract as many as 100,000 birds at some periods of the year. By building blinds on land adjacent to the refuges, guides and landowners using the electronic call can charge hunters anywhere from $10 to $25 a day, sometimes more, per man and practically guarantee that each hunter will obtain the legal limit of birds. Multiply that by a dozen men per day per blind for 55 days and you begin to get some idea of what the gadget can do, technicians say.

The Fish and Wildlife Service has also reported that a survey in one East Coast hunting state indicates a kill and crippling loss of some 100,000 geese last fall. This is a substantial increase over previous years. State and federal officials attribute much of this increased kill to the use of electronic calling devices. Really widespread use of the devices is a prospect that gives the technicians real concern.

One Maryland defender of the canned call gadget told AMERICAN FORESTS not to forget that the device had great potential for camera fans and "bird watchers."

"Have you used your machine for taking pictures or bird watching," we asked him. To which he admitted he had not.

While manufacturers of the device and their advocates may protest, the fact remains that a ground swell of opposition to the recorders was building up in Washington last month. In addition to conservation groups, many sportsmen have already urged Secretary Leffler to take prompt action in either outlawing or rigidly regulating the use of the canned calling devices.

Finally, Fish and Wildlife keeps coming back to the fact that the kill in at least one Maryland county last year was 50 percent higher than it was prior to the advent of the Hi-fi recorder. **(J.B.C.)**

Wilderness Bill

(*From page 6*)

as well as on theories of human behavior, has been that in the United States our best opportunity for wilderness preservation on most of the areas where there is wilderness is through the federal government.

It is true that some of our states have great areas of wilderness, and with regard to them the citizens of those states have opportunities and responsibilities similar to those that they nationally share with the rest of us with regard to areas in federal ownership.

A further assumption — a bold one — that some of us have is that our wilderness preservation purposes include perpetuity. We are trying to keep unchanged by man areas that have so grown through the eternity of the past, and, although we stand in awe at our own presumption, we dare to plan that they may so persist through the eternity yet ahead.

This means — among other things — that lands in private ownership are not areas available for such planning, in perpetuity.

All these assumptions lead to the following prime thesis:

Hope in the United States for wilderness in the future depends on our success in developing a policy and program that provide for the preservation of wilderness as such, by our federal government, with a presumption of perpetuity.

I must say "*presumption* of perpetuity" because our successors are, and must be, free to modify—or even abandon—any or all of our arrangements.

Every arrangement with an objective of permanence, if it is faithful to our human responsibilities, if it is made with an awareness of human realities, must include provisions for change.

There is no freeze that can not be thawed.

There is no lock without a key, and if the key is not available the lock itself is in danger.

There can be no sound program to establish or to provide for the preservation of something that does not include provision for addition, modification, elimination.

The best we can do is to perpetuate the opportunity for perpetuity.

With these basic assumptions we have approached wilderness preservation legislation.

Existing circumstances have also been duly regarded, of course. Although wilderness is our oldest resource, it is the latest to be recognized as in need of conservation, and the circumstances surrounding this recognition include the

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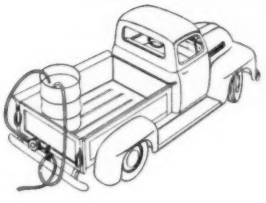

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prior disposition of the lands that include our remaining resource of wilderness. Every place where we have wilderness we now have something else also. It is very late in our land management history to be considering the preservation of the primeval.

At the same time we must also recognize that we do still have a remarkable heritage of wilderness available for our use and preservation. There is much more than any of us could traverse in a long lifetime of vacations. If our concern were only for our own experience, we might spare ourselves the distress that comes when peaceable idealists find themselves compelled into controversy and confronted with the perplexities of practical arrangements.

My wife and I with our four children one morning last July drove from our home here at the Nation's capital and camped that night in New York State across the Sacandaga River from a wilderness that stretches 20 miles or so to the nearest road. Half way across it we would have been about 10 miles away from a road in any direction. It was dusk when we ate the camp dinner that Alice set before us, but we had come from the capital of the United States through the nation's metropolis in one day's drive to the edge of wilderness.

We do still have a remarkable heritage of wilderness!

This Adirondack wilderness where we camped that night was a state-owned area—one of the dozen or so state-areas of wilderness that include an aggregate of something like 3 million acres. The federal areas that make up our wilderness preservation resource — 163 or so of them—include an aggregate of some 55 million acres.

So we do still have a considerable heritage of wilderness, although (as I was saying) it *is* very late in our land management history.

When we realize that all our wilderness areas are on lands being managed already for some well-thought-out purpose, we find ourselves facing an important choice.

Bearing in mind our basic assumption that no areas will remain wilderness except as they are deliberately so preserved, we must choose between a transfer of the wilderness to be preserved into a new jurisdiction or its retention under existing management. We must choose between creating a new category of lands that will be separately administered *as wilderness* or finding out how to preserve our wilderness as wilderness within its present categories. We must choose between establishing a new Bureau of Wilderness Preservation or relying on the land-management agencies we now have.

Such are the choices that are inevitable as we seek to preserve, as wilderness, land already under administration for specific purposes. Such are the choices that we have faced as, with the basic assumptions which I have already outlined, we have decided on such a proposal as the wilderness bill "to establish on public lands of the United States a National Wilderness Preservation System for the permanent good of the whole people, to provide for the protection and administration of the areas within this system by existing federal agencies."

Facing these choices, considering our circumstances, studying the wilderness itself, we have been led during the past decade to certain decisions that seem both right and in harmony with the conditions.

What *is* wilderness?

We are dealing, of course, with a human concept, and essentially it is one of those concepts that is positive largely because of what it negates. Chastity is another, for example. We describe an area as wilderness because of a character it has—not because of a particular use that it serves. A wilderness is an area where the earth and its community of life are untrammeled by man. (Untrammelled — not untrampled — *untrammelled*, meaning free, unbound, unhampered, unchecked, having the freedom ot the wilderness).

With this concept of wilderness it is comparatively easy in our circumstances to decide not to try to create new and separate areas of wilderness, under a new and special bureau, but rather to try to provide for the preservation of their wilderness character in their varying circumstances under their present administration.

One administrator criticizing the wilderness bill told me last December that you can not expect *foresters* to preserve wilderness. He was stabbing at the very heart of this proposal; namely, the conclusion that we can — if we so will — preserve wilderness in the forests under foresters, in refuges under wildlife managers, and in parks under their expert administrators.

Wilderness is land with a certain character. Retaining that character, it can still serve varying or various purposes.

Such a choice, such a realization, makes it easy to forsake the idea of a new and separate bureau in favor of continued administration under the agencies presently responsible. Wilderness is not only land with certain character that *can* be preserved in varying circumstances. It *has been* so preserved; the areas of wilderness that we now have are all areas which serve some stated purpose other than preservation of wilderness as such.

The wilderness of each national park, for example, is back country, or foreground, to some unique scenic splendor, some superb example of the sublimity of our American landscape, some complex of wildlife or flora. The national park idea has suggested the wilderness concept, but the two are not identical. The idea at the Madison Junction in the Yellowstone country was not to preserve wilderness but rather to assure all Americans the right and privilege of beholding the great natural wonders that Cornelius Hedges and his companions had seen. We owe the leaders of the National Park Service a great debt for the way in which they have fostered the wilderness idea, but we must recognize that the wilderness concept is compatible with, not identical to, the national park idea — an enrichment certainly of the national park purpose but not the genesis.

Similarly our wilderness, wild, primitive, and roadless areas are indeed parts of the various national forests within which they are located — and they are serving essential purposes of those forests. *While serving these purposes*, these areas have retained their wilderness character — to a very great extent because the administrators of the national forests have so managed.

The Okefenokee National Wildlife Refuge is one of the deepest areas of wilderness that I have known, but it is so not because of any recreational use which it shares with any national forest or national park area but rather because its wilderness character has been preserved by the Fish and Wildlife Service in connection with the administration of Okefenokee as a *wildlife refuge*.

Thus have our wilderness areas been preserved so far, by land-administrators in *various* agencies who have handled them for various purposes in such a way that we still know them as wilderness.

I do not propose to weary you with further details of the quandaries that we have faced in shaping the proposal that is now embodied in the wilderness bill. I do hope that I have shared enough of them with you that you will more readily understand the nature of the proposal and more pointedly be able to criticize our expression of this proposal and contribute to our further progress—or correct us in our errors.

I might, however, say one more introductory word as to our purpose. This has to do with an attitude that Senator Hubert Humphrey made apparent, I believe, in talking to you last month. That is, in proposing this wilderness legislation we are not meaning to challenge

any economic program—although we do wish to exclude prospecting and mining from wilderness areas, except, of course, where private rights are already established. Our wish rather is to design a wilderness preservation program which can be a part of an overall program that includes also our economic uses of our natural resources.

I have often said myself essentially what Senator Humphrey told you when he emphasized that in preserving wilderness we mean no competition with forestry, for example, but rather that we hope for, and recognize as essential to wilderness preservation, the further development of a sound and prosperous American forestry.

As reported in the *Congressional Record* of February 22, 1957, Senator Humphrey said here at your February 14 banquet:

"The fact is the wilderness bill has been prepared in accordance with the wilderness policies, programs, and practices of the Forest Service, and in admiration for them. The bill is designed to strengthen the Forest Service's hands in carrying out these policies and programs.

"The national forest areas that will be included in the wilderness system are those that have been designated by the Forest Service as wilderness, wild, primitive or roadless. And the bill provides that these areas shall be administered under regulations that would be drawn up in the Forest Service.

"The wilderness bill, I emphasize, will not interfere with, but will perpetuate, the present multiple-purpose administration of these national forest areas. Its central concept is that our present areas of wilderness can be preserved within the existing land-management pattern if this preservation purpose is made a matter of fundamental policy.

"Rather than upsetting the multiple-purpose program of the Forest Service, the effect of this legislation will be to *prevent* the upset in this program that will result if the wilderness areas are not protected from the uses that would destroy them as wilderness."

Senator Humphrey went on to say:

"The wilderness bill . . . is in no sense in conflict with, or in competition with forestry for forest products. On the contrary it actually is dependent on foresters for its success. If ever the American people come to the borders of our wilderness areas with a need for timber that can not be met elsewhere, then, gentlemen, I say to you our wilderness areas are doomed. It is to the foresters of America and their effective programs for sustained yield cutting, on our production forests, that we shall have to look eventually for success in

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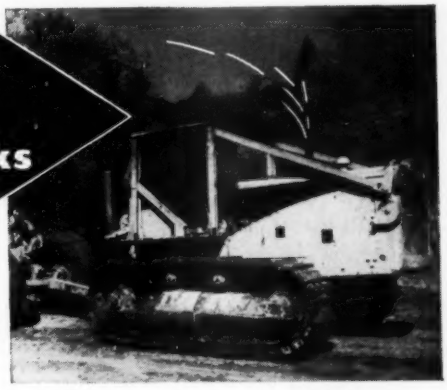

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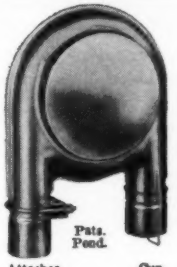

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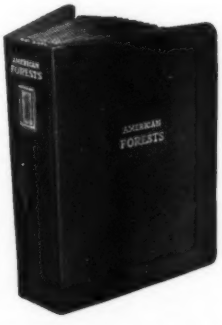

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wilderness preservation. We recognize this, and we face our present program in a spirit of cooperation and with a feeling of dependence on the intelligent foresters of America for support.

"I think," said Senator Humphrey, "that all true conservationists should consider the bill in this light. In my judgment it will provide a means for making orderly changes in our wilderness system so that these areas will truly fulfill our needs and not one bit more. It will give us a chance to provide a really sound wilderness system by truly democratic processes."

We of the Citizens Committee on Natural Resources who are advocating the wilderness bill concur in these interpretations of its intentions and purposes which were thus made so carefully by Senator Humphrey.

Similarly we believe that there need be no conflict with recreational requirements for areas where we can enjoy the developments and facilities that destroy wilderness but offer us various advantages. As with regard to our needs for commodity production and the taking of natural resources for our industrial and other uses, so also with regard to recreational opportunities, it is our belief that—if we so plan—we can still have in this country a system of wilderness areas dedicated to preservation, and we can have this without sacrificing our other needs or conveniences.

But we can not do this if we continue to appropriate more and more of the wilderness for development and exploitation, multiplying thus the opportunities to realize our other purposes but depriving ourselves of the privilege of wilderness enjoyment and use—if we so choose.

Now, I wish only to present to you the wilderness bill itself and thus submit it to you for criticism, suggestion, discussion. It is the embodiment of our answers to the many problems we have faced in our efforts to develop Congressional legislation which will make wilderness preservation a policy of our government and provide for its application to actual areas of wilderness. It answers the question posed here tonight—"What Should Be Our Policy Toward Wilderness Areas?" Let me present it. (Here the bill—S.1176—was read omitting the names of the areas specified but including all the substance of the bill).

Finally, let me appeal to you for your counsel, your criticism, your cooperation, in correcting us where we need correction, and for your cooperation in helping us to accomplish what I believe we all feel is a contribution in the public interest; namely, the preservation of an adequate resource of wilderness not only for ourselves but for our successors also.

I have tried to share with you the thinking that has been evolved by those of us who during the past decade have made this matter our prime conservation concern. And I have tried to show you how that thinking has been expressed in the wilderness bill.

But I have not done either with any dogmatic sense of finality nor with any haste for acceptance and ultimate action at once, but rather with an interest in your comments and your criticism. Centuries ago, I understand, Plato said: "Nothing spoken or written is of any great value if the object is merely to be believed, not to be criticized and thus learn more." I welcome your criticism and constructive suggestions.

A German Forester Looks at America

(*From page 43*)

west, and white pine and northern red oak from the Northeast. Other species were planted on an experimental basis and some in small numbers by dendrologists. The management and the reactions of these tree species within the area of their natural distribution can therefore be sure to arouse the interest of every German forester. It would be premature, however, if one tries to give a final outlook on the situation of American forestry after studying only these tree species, which we have so to speak in common, or after a visit particularly to the unbelievably impressive stands of Douglasfir, which simply cannot be understood in the light of German experience or in German concepts of size. Almost three quarters of the commercial forests are located in the North, East and South of the United States, if we consider the area. But on one quarter of the area in the West, almost two thirds of the saw logs are concentrated at present. In the North and East it is 13%; and in the South 19%. These figures show where the future tasks of American forestry are to be found. Therefore, I have visited these areas with particular interest and attention. As far as ecological conditions, growth, volume and basal areas are concerned, the central European forester feels somehow more competent for instance in the hardwood stands in Pennsylvania, in the red and white pine areas of Michigan, in the shortleaf and loblolly pine stands of the South. Here he finds parallels in the growth and the management of these species and their response to those with which he is familiar. It is, therefore, easier for him to judge what has been done, what is being done, and what should be done.

Within a few generations the forests in these areas have yielded almost unimaginable amounts of timber, and thus made a decisive contribution to the industrial growth of the country—and this in a surprisingly short period.

To make the story short, whatever part of the overall problem you check, progress is evident everywhere. The task which lies ahead for American forestry, however, is no less: six out of ten acres of forest land belong in the group of small and medium properties, and four fifths of all non-stocked areas come into this category. In addition, large areas of private forests are poorly stocked. To get them back into production requires money and patience, but it particularly requires a change in the attitude of many owners which can only be achieved by education. I can do nothing but admire the remarkable efforts already made toward this aim.

To the same extent to which even-aged plantations develop however, the problem of economic utilization of the residues of thinning operations grows, too. Expanding steadily, the even-aged pure stands particularly in the South on poor sandy soils, are very likely going to follow their own laws, if I may apply European experiences. Pests and insects of as yet unknown species will develop, and cause the pathologists and entomologists much concern. The effect of short rotations in pure stands on the soil one day may bring up the question of melioration and fertilization, because I am pretty sure that the response of those soils to such a pattern of forest management will not always be favorable.

The particularly effective organization and cooperation of federal and private research with the extension service and practical forestry, which I have met throughout the United States, together with the excellent research installations in this country, will help to recognize and thoroughly study those problems and to place the results of their research into the hands of practical forestry without delay.

Furthermore, I think I might say that some of the experiences and studies of European foresters could give some valuable suggestions in this respect. Generally speaking I would like to add that my work has convinced me that a close exchange of ideas and experiences between our countries in our field of forestry can be of mutual profit.

Will We Let Our Elms Die?

(*From page* 23)

previous years, Brookline's number of diseased trees is steadily decreasing. In fact, Brookline's percentage loss of elms from this killer disease is no worse than the percentage of maples or other shade trees not now being attacked by a disease! "If we were to let our elms go because of neglect, it would cost our taxpayers well over a million dollars for removal alone," I was told by Daniel Warren, Superintendent of Parks; "to say nothing of the decline in real estate values, loss of civic beauty beyond price. When you save elms, you save dollars!"

Detroit, Mich., with nearly half a million elms to protect, has a gigantic program underway, costing the city $324,000 a year for a coordinated campaign. But that's only a fraction of the expense of doing nothing. And so far, Detroit has held its rate of loss to only four-tenths of one percent, annually.

But can every community afford a control program? *They can't afford not to.* Witness what happened in the village of Bexley, a suburb of Columbus, Ohio, which abandoned its elms to the ravages of the fungus. I drove through Bexley's broad boulevards and park areas—almost completely denuded of elms, only great decapitated trunks remaining, long rows of them. The village has already spent nearly $100,000 for removing only Dutch elm trees—plus more than $25,000 for putting saplings into the ground that won't give benefits for scores of years. And the twin cities of Urbana and Champaign, Ill., have taken roughly $200,000 from the municipal budgets in the last five years to remove trees stricken by the fungus. "Inertia and penny-pinching can sacrifice our elms—and invite an economic problem perhaps a hundred times the cost of control measures," says Dr. Howard C. Miller, the Dutch elm expert at the State University College of Forestry, Syracuse, N. Y.

Shade trees are not a free gift of nature. Each elm was deliberately planted in an artificial setting, and they all need care and upkeep, just like our sidewalks. How to finance this upkeep? Buffalo, N. Y., floated "tree bonds," in the same way as they'd go into financing for other municipal improvement projects. In Freeport, Ill., voters overwhelmingly approved an "insurance policy" on their elms—a five-mill tax on each $100 assessed valuation. That will

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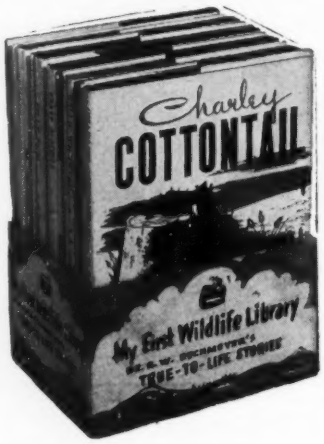

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start control measures even before the disease strikes, thus lessening the damage.

Should we continue to plant more elms? "Definitely," says Dr. Albert E. Dimond, chief plant pathologist at the Connecticut Agricultural Experiment Station in New Haven. "The disease won't make the elm extinct, but man will if he doesn't continue to plant the tree." Greenwich, Conn., for example, actually sets out more new elms each year than it loses from the disease. So far, nearly 500 have been put into the ground—and but one has been attacked by the fungus.

A coordinated program of both spraying and sanitation is necessary. They can most efficiently and cheaply be carried out as a community project, and this is where civic groups and clubs can take the lead. In Sycamore, Ill., for example, the local Chamber of Commerce acted as clearing-house for homeowners who wanted their trees protected by spraying. Because it was done on a large scale, the spraying was much more effective—and the cost to individuals was reduced by about two-thirds. Now the city is administering the control program, including the hiring of a professional forester.

There is a vast reservoir of citizen-power waiting to be tapped for a Dutch elm disease program in your community. Early detection of a diseased tree is vital to protect the healthy ones nearby. In Wheaton, Ill., the city was divided into 29 "tree protection districts" and the elms in each district were put under the surveillance of one of the community's 29 cooperating civic organizations. In the Kirkwood, Mo., Greenbriar Hills subdivision, the garden club ladies plastered every diseased tree with giant crosses of bright yellow paint. When landowners saw the 250 marked elms, they awakened to the threat and started doing something about removal. The Boy Scouts did the job in Moline, Ill.: the strenuous efforts of 24 troops pinpointed every elm in the city, dead and alive, 50,000 of them.

If your community has been afflicted for many years and you never had a control program, is it too late to start now? Definitely not, according to a demonstration campaign put on by the Bureau of Insect Pest Control of the Massachusetts Department of Conservation. Alford, Mass., had found its first diseased tree in 1941 and by 1950 was losing elms at the rate of nearly 300 a year. The State and Berkshire County Commissioners worked out a joint control program. All diseased trees were removed and spraying was initiated. Within the space of only two years, the rate of loss had been cut to 80 trees. Concludes the Massachusetts Department of Conservation: "Dividends are realized even in the first year of operation, and for those who continue the program the work will reach a point in the third year where only a minimum outlay will be required."

Once you start a control program, it must be sustained. This is proven by comparing two towns in Massachusetts, only ten miles apart: Amherst and Easthampton. Amherst *sustained* a vigorous effort to protect its elms; Easthampton made a good effort and then *neglected* the problem for two years. While Amherst's rate of diseased trees decreased to under one percent, Easthampton, within two years after slowing down on its program, saw its loss jump from no trees to 11 percent of the elm population! So, instead of continuing to spend just $1650 a year for control, Easthampton had to up its outlay to $11,750 when it resumed the program.

Science, too, has been working on ways to fight the disease and research shows real promise. Available already at commercial nurseries is a highly-resistant tree — the Christine Buisman Elm—which was the result of 16 years of experiments in Holland led by a leading plant pathologist, Dr. Buisman. And in America an intensive search is under way among our native elms for trees with resistant characteristics. From a total of a quarter of a million elms selected at the Columbus, Ohio, laboratory of the Agricultural Research Service, there are now 23 that look very promising. If they continue to hold up, they could be in the hands of the public in five to ten years. Cornell University College of Agriculture also has about 16 selections that are little bothered by Dutch elm disease.

Chemotherapy — putting chemicals to work to fight the disease *inside* the tree—is also being tried, and at least 200 compounds have been tested since 1940 at the Connecticut and Rhode Island Agricultural Experiment Stations. A number of these compounds have worked experimentally, but they are expensive, of short duration and impractical for large-scale use. It does appear, though, that we are on the threshold of a major discovery in

(*Turn to page* 58)

THREE ANNUAL MEETING SPEAKERS NAMED

Dean George A. Garratt, Yale School of Forestry and Pinchot Professor of Forestry — "Forest Products and Markets"

DR. Frank H. Kaufert, Mr. C. D. Dosker, and Dean George A. Garratt are three of the principal speakers who have been selected to address the first day's session of The American Forestry Association's 82nd Annual Meeting, to be held in Madison, Wisconsin, September 30 to October 2.

"The Lake States Forest Story" will be the topic of Dr. F. H. Kaufert, who has been director, School of Forestry, Institute of Agriculture, University of Minnesota, since 1948. Dr. Kaufert's career in forest education and research, as well as "extra curricular activities," has been outstanding. The most recent of the latter includes serving as director of the Forestry Research Project for the Society of American Foresters, and as forestry advisor, Seoul National University Cooperative Project, Korea.

Mr. C. D. Dosker, president of Gamble Brothers, Louisville, Kentucky, will speak to the AFA members on the subject "What Does the Future of the Forest Economy Look Like?" Having been in the lumber business since 1922, and in his present position since 1945, Mr. Dosker has long been active in promoting utilization and product research. He has also been actively engaged in assisting in the establishment of better forest practices in the state of Kentucky.

Dean George A. Garratt, Yale School of Forestry, and Pinchot Professor of Forestry, will address the group on "Forest Products and Markets." His career has been largely devoted to teaching and educational administration, including 32 years of service as a member of the faculty of Yale University. Dean Garratt is the author of two standard forestry text books, and has written numerous articles in the fields of wood anatomy, wood utilization and forestry education. He served as chairman of the Wood Technology Subcommittee of the Society of American Foresters which prepared and published the first edition of *Forest Terminology*.

The second day's session will consist of two panel discussions: "What's Cooking Now About Better Utilization and Management" and "Improving Utilization Through Research and Information."

Participation in the actual dedication of a Tree Farm by the American Forest Products Industries, Inc. will highlight the tour portion of AFA's annual meeting. The Tree Farm dedication, as a part of AFA's Small Woodland Program, will be held on Wednesday, October 2. The woodland selected for this honor by the State Tree Farm Committee has been in the same family for some 100 years, and has yielded several harvests—the details of which will be explained during the ceremony.

Happily the annual meeting ties in with the Annual Fall Color Tour of the Wisconsin Federation of Women's Clubs. The federation plans to invite AFA women members to join its functions on Thursday evening, October 3, at the Trees for Tomorrow Camp at Eagle River. Members of the federation also plan to visit the research exhibit of wood products to be held in connection with AFA's meeting. School children in the state will also participate in these activities.

"Lake States Forest Story" is topic of Dr. Frank H. Kaufert, director, School of Forestry, University of Minnesota.

Mr. C. D. Dosker, president of Gamble Brothers, will speak on "What does the future of the forest economy look like"

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fighting the Dutch elm fungus. "Chemotherapy is an excellent possibility, but we just don't have all the answers as yet," I was told by Roger U. Swingle, pathologist in USDA's Ornamental Plants Branch at Columbus, Ohio.

Even biological control of the bark beetles isn't being overlooked by the Dutch elm fungus fighters. Two years ago, French scientists at the National Institute of Agriculture in Paris reported that they had isolated three different kinds of bacteria that proved completely deadly to the beetles. Cultures have already been sent to Dr. Charles Doane of the New Haven Experiment Station, and he'll soon start experiments over here.

So long as our citizens continue to work prodigies for the elm, there is no reason to believe that it will ever become extinct from the American landscape. It is not too late to save this tree—so deeply rooted on the face of the land as to be an actual part of the architecture of thousands of our towns and cities. For the multitude of benefits the elm gives — and for hard-headed municipal economy alone — you couldn't do better than to start a Dutch elm control program in your community.

Jamestown

(*From page* 14)

and revelled in the days before coming to America.

Two brick pavilions contain unusually interesting historical exhibits: (1) "The Old World Heritage," presented by the British Government, and (2) "The New World Achievement," sponsored by the Commonwealth of Virginia.

Beyond, a gravel path winds through pine woods in the direction of the James River. "Powhatan's Lodge," a tall structure made of poles, covered with bark and thatch, reminds us that the Indians used timber freely for houses and meeting places long before the white man came to the New World.

Beside the lodge stands a log canoe or dugout — America's first battleship! Across the path, a circle of posts, their tops carved into faces, represents a place where tribal ceremonies or war dances were held.

The big triangular log fort, the most imposing structure in the Festival Park, really makes the history books come true. Black guns frown from the rounded corner bulwarks,

and its palisade of native pine looks as formidable as those of the original fort, whose site has long since been washed away by the tides of the James, must have looked to marauding Indians.

Within the heavy gates a complete little pioneer village of half-timbered huts, with walls of wattle and daub, and roofs smothered with thatch, has been reconstructed. A wooden church, a storehouse, a guardhouse and other small buildings complete the picture of the earliest walled "James Towne." Soldiers in gay 17th Century costumes, and bearing ancient muskets, are borrowed from the Continental Army Command, at Fort Monroe, Virginia. They parade twice daily on the broad Mall near the reception center.

Moored to a dock, that curves to form its own sheltered harbor, are three brightly-painted little sailing ships—full-scale replicas of the *Susan Constant*, flagship, the *Godspeed*, and the *Discovery*—that brought the original settlers from England. The instant reaction of visitors, one and all, is: "My, aren't they small!" It does seem incredible that vessels as tiny and as heavily-laden as these could have survived the long voyage, and managed to accommodate more than 100 settlers and sailors, plus their equipment and supplies.

The *Susan Constant* of 100 tons, largest of the three, actually is no longer than a small modern riverboat, while the other two craft are exceeded in size today by the lifeboats carried on big ocean liners.

Gangplanks give access to the small decks and crowded cabins of the ships. Overhead swings their furled sails and a maze of rigging. Except for small cannon, the anchor flukes, and some fittings of metal, the shrouds and other rope, and the flaxen sails, the three vessels are built entirely of wood, as were the original vessels that brought the first pioneers to our shores.

A visitor, his amazement growing as he surveyed the miniature dimensions of everything on board the *Susan Constant*, finally exclaimed: "Well, all I can say is that my ancestors had far more courage than I have!"

One exhibit in the Festival Park stands very near the sites of its prototype. The Glasshouse, earliest of American factories, was built on the mainland to avoid the risk of fire. It was one of several industries given a trial before the colonists learned that tobacco was their best source of wealth. Using coarse sand from the river banks, the Glasshouse produced briefly in 1608-09, when the enterprise lapsed until it was revived in 1620. After that no record of operations survived; in fact, the site was lost until 1931, when it was rediscovered and identified.

The present Glasshouse, reproduced by the glass industries of America, is housed in a medieval-type frame structure with open sides and a tall thatch roof. Costumed craftsmen still use charcoal to melt the glass sand. From a small bubble of molten glass they blow pitchers, tumblers, vases and other objects, typical of those produced 349 years ago, that are offered for sale. The benches, water tubs and other equipment of the Glasshouse are made of native wood.

Visitors to the area are shown also the remains of the original 1608 Glasshouse, now covered with a modern shelter. Near it, too, is a section of "The Greate Roade to the West," which once ran from Jamestown to Middle Plantation, later to become Williamsburg. This is the oldest remnant of a road in English America.

Perhaps the most thought-provoking of all exhibits in the Festival Park is a bronze plate at the base of Discovery Tower, a brick pylon that soars 80 feet above the greensward of the Mall. It reads:

1607
AT JAMESTOWN BEGAN:
THE EXPANSION OVERSEAS OF
THE ENGLISH-SPEAKING PEOPLES;
THE COMMONWEALTH OF VIRGINIA;
THE UNITED STATES OF AMERICA;
& THE BRITISH COMMONWEALTH
OF NATIONS.
1957

Just a little over a half a mile from the Festival Park beyond a narrow backwater, is Jamestown Island. In contrast to the showmanship and activity of the park, the island is a quiet spot, as befits the memory of hundreds of pioneers who here gave their lives that somehow this first beachhead should survive.

"Where is the *town*?" you are likely to ask, and two museums, one operated by the National Park Service and the other by the Association for the Preservation of Virginia Antiquities, will help to answer your question. For there were several Jamestowns, one succeeding the other as fires or the washing away of shoreline radically changed the face of the settlement. Finally, in 1699, the capital of the colony was moved

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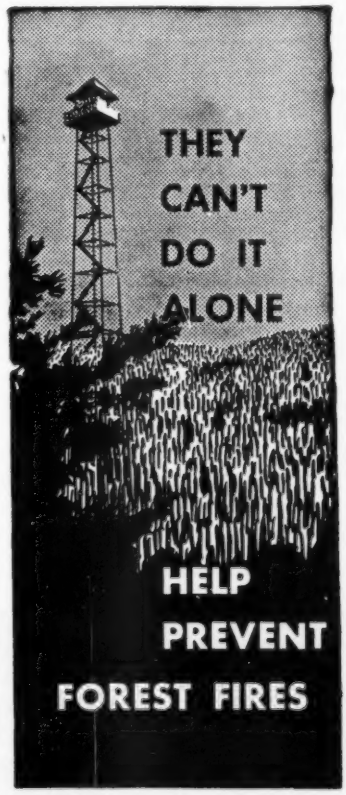

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to Williamsburg, and soon Jamestown ceased to exist as a community.

Of the 17th Century capital, only the old brick church tower, and some 120 foundations of houses and buildings remain. All but a dozen or so of the latter have been reburied to protect their bricks from the pulverizing effect of the weather. At the site of each of the bared ruins a glass-enclosed painting shows the structures as they are believed to have appeared.

More than a half a million items have been sifted from the soil of this historic island, but most of them are metal, glass or pottery. However, there is much evidence of the use of wood in the dioramas and the color slides shown in the Park Service Museum.

Most interesting of the living trees on the island is a venerable sycamore in the graveyard surrounding the Memorial Church. It has parted the heavy gravestones, formerly side by side, of the Rev. James Blair (founder of William and Mary College) and his wife Sarah Harrison.

Off the sea wall, well out in the James, stands an old cypress tree, which once grew along the shore of the island. It is estimated that from 1607 to the present about twenty acres of Jamestown Island have been washed away by the river tides and currents.

A pleasant surprise for those who motor this year to or from Jamestown via Williamsburg is a new, beautifully-landscaped section of the Colonial Parkway, much of it running along the north shore of the James River. Forests of pine and hardwoods come down to the water's edge, giving way to stands of cypress, whose mysterious "knees" pop up out of the water like inquisitive gnomes.

The parkway itself dives under the restored area of Williamsburg in a tunnel, to continue on to Yorktown, scene of the concluding battle of the American Revolution. Because there are no lodgings of any kind in Jamestown, visitors to the festival should stay overnight and eat in Williamsburg or vicinity. Thanks to the new Motor House and other motels, and to numerous places to dine at various price ranges, this should not be difficult, although reservations are advised over weekends and holidays.

Williamsburg itself carried the American uses-of-timber story on another chapter, even before it became the capital of colonial Virginia in 1699. By this time, it was realized throughout the colonies, that there was no reason for America to follow the "half-timber" construction favored for the shops and homes in England. This picturesque design was a child-of-necessity in a land where wood had become so scarce that houses had to be built with timber framework, filled in with wattle and plaster.

In America, on the other hand, trees of all kinds were so abundant that those attempting to clear land for agriculture considered them a nuisance. At first, the houses of America imitated the conventional English "half-timber" pattern. When it was realized finally that houses could be economically and quickly built entirely of wood, new architectural concepts came into being. Structural strength no longer depended upon great beams alone. Outer walls of wood, the clapboard, came into being, along with simpler framework, and dormer windows.

All of this is graphically illustrated with models of building facades, bolted into the walls of Colonial Williamsburg's new Information Center. A free exhibit illustrates sources of American colonial architecture and compares American and English structural details. A complete section of an 18th Century wall, constructed of original materials, is also a part of the exhibit.

While you are in the Information Center at Williamsburg you will probably want to see the free showing of "Williamsburg — The Story of a Patriot," a dramatic 35-minute color movie dealing with the turbulent years between the imposition of the Stamp Act and the beginning of the American Revolution.

From eastern England and from Holland, pioneer residents of Virginia brought with them the idea of a wooden windmill, whose sail-covered arms would use the power of the wind to grind grain, saw lumber, or pump water. The colonial windmills have long since disappeared, but an excellent reproduction of an 18th Century windmill is a feature of the Williamsburg landscape.

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The Lakes That Stamps Built

(*From page 25*)

proved hatchery operations, but the most important point is that more trout are being harvested than ever before. Where at one time 25 to 50 per cent of all stocked trout were never caught, today as high as 90 per cent are landed. And where once several thousand fingerling trout were stocked with little hope of ever finding their way into a creel, today 50 per cent of these stocked fingerlings are skilleted annually. And now families, not just a hardy few, are fishing for trout where it was at one time unheard of.

No, nobody waved a magic wand across the rugged West Virginia mountains to bring all these things about. But the sound thinking and wise judgment of the Conservation Commission, the U. S. Forest Service, and a great number of private citizens brought the trout lake to West Virginia.

To date the state owns six of these trout lakes and this is a most welcome development in a region where too many streams and rivers are heavily polluted. They are not large but their waters are cold, clear and clean. They all drain heavily forested watersheds and silting is not a major problem. The fishing pressures upon these small acreages have been the heaviest found in the nation, but surrounding them are the best West Virginia has to offer in trout streams.

While the trout lake idea is relatively new to West Virginia, the impounded waters have already made quite a name for themselves. Spruce Knob Lake now owns the state record on rainbow trout, producing one that tipped the scales at ten pounds in 1956. And little five acre Seneca proved she could carry trout over. When she was drained last fall, three rainbows and browns were found that went five and six pounds, while 129 others were salvaged that had survived pressures ranging to 500 anglers per acre of water.

Two of these lakes, Spruce Knob and Summit, make up the major impounded trout waters in West Virginia. They are not large, as lakes go, but they are the largest of all such lakes in the Mountain State. Summit holds some 43 acres of water while Spruce Knob Lake has 26. These are the backbone of trout lake fishing.

Perhaps most unique about these two impoundments is that they were built by "stamps." The 1951 legislature authorized the Conservation Commission to issue special licenses, costing one dollar each, to all hunters and fishermen who hunted or fished in national forest lands and waters. The legislature further provided that money received from the sale of these licenses or "stamps" could be used only for hunting and fishing improvements on national forest land.

Since it seemed the most pressing need at the moment, more fishing waters were planned. Spruce Lake was the first major improvement made through the stamp fund. This lake met with such tremendous success that further development in this direction was assured. There were 10,000 people on hand to greet the initial opening of this 26 acres of trout water in 1953. Some were too young to fish and others apparently came just to watch the show, but everybody was excited.

And it was quite a show—something like the Oklahoma Land Rush and more like Barnum and Bailey. The noise, confusion and splashing were great, but the fish were cooperative and 5000 were creeled that first day, and they ranged from 12 to 19 inches long.

This was the start of a giant exodus. West Virginia's 180 trout stocked streams drew their first opening day breath in 1953. Famed Cranberry, Williams, Shavers Fork, and others could be fished in comfort, because those who usually opened the season there had gone lake fishing.

But more than that, people who hadn't fished in ten years were there to fish the lakes. Kids too young to trample a trout stream, women too "soft" to stumble over rocks, men too old to fight the rigors of heavily inclined streams fished, caught trout and had fun.

From the standpoint of economics, satisfaction for the fishing populus as a group, and wholesale fishing accommodations, the "pothole" fishing program of West Virginia has been tremendously successful. Had the money spent on stream-stocked trout that never reached the creel been put into trout lakes, perhaps a dozen more could have been built over the last several years. For instance, we know that some 20,000 trout are stocked in 43-acre Summit Lake each year. Of these, at least 90 per cent are harvested by anglers.

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At the accepted rate of $.40 per fish, $8000 worth of trout were stocked and $6400 worth were caught, a loss of some $1600 annually. The "free" fingerlings which grow up are not included.

However, for each 20,000 trout stocked in streams, probably not more than 50 per cent are caught, which means that a loss of $4000 per year is incurred for every 20,000 trout stocked. Using these figures, it wouldn't take long for the $50,000 it cost to build Summit Lake to pay its own way.

Trout fishing for the masses, which the trout lakes provide, is a short-termed proposition at best. After the first two or three weeks, the trout waters are left to the dogmatic. And here again the lakes shine.

Despite the tremendous pressure of the early season, as high as 10,000 trout being removed from 43 acres of water the first week end, all of the trout are not caught. In fact, whether hatchery-reared or native wild, the larger fish are the least gullible. They become less so as the season progresses, and many of them are around after the season is well on its way and even when it's over.

It is generally accepted that few southeastern trout streams will grow fingerlings to adulthood in the desired length of time. Survival over the first winter of stocked trout fingerlings is usually less than one per cent. In the average West Virginia trout stream, it would take a three or four inch fingerling two full years to grow large enough to interest anglers. And as if this were not enough, probably not more than five of every thousand stocked will reach catchable size. Even less will ever reach the creel.

Knowing this, it seems absurd to even consider stocking fingerling trout. Yet, nearly all hatcheries hatch more fish out of the egg supply than they can possible ever raise to adulthood. This is done as a safeguard against such catastrophies as disease, or low hatching success. Therefore, each year there are several thousand fingerlings on the surplus side of the ledger.

Since the inception of the lake program in West Virginia, these surplus fingerlings are not wasted any longer. They now form one of the best methods the Conservation Commission has come across for supplementing the trout catches inexpensively. They grow up in these cold water impoundments. Considering all costs from the egg to growing the fingerlings to two or three inches, it costs about one penny apiece to rear them and stock them in the impoundments. To have reared them in the hatchery, provided the facilities were available, it would have cost the state $.40 per ten inch trout. These fish can grow up in the lakes at no further cost to anybody. And they'll grow much faster than they would have in any trout stream in the state. Three inch fingerlings released in the summer or fall of 1956 will run six to eight inches in the summer of 1957. If they survive the fishermen, they'll grow into real lunkers of the "wildest" type found anywhere. And, contrary to stream-stocked fingerlings, more than 90 per cent of those stocked in these impoundments will find their ways to the angler's creel.

But the trout lakes in West Virginia are not built to deprive anyone of his sport. They are built to spread the sport around to as many as possible. This appears to be the rub. Those who stream fish often remark that they are being sacrificed for the benefit of those who don't want to "work for their trout."

Actually, the pressures removed from the trout streams by these lakes has had a counter-balancing effect. The stream man has more stream to himself now than he did before, and while some stream allotments of fish are cut down to supply the lakes, the lake allotment is a pittance if spread out over the 180 streams the state stocks with trout. The breakdown shows that streams continue to get about 86 per cent of all trout stocked, while lakes get only about 14 per cent. This means that of 400,000 trout planted in 1956, the lakes got about 56,000.

While, in some respects, lakes have in a small way deprived the gallant few, they do appeal to the masses and help meet the obligation of the state. But, since trout fishing will always be a put and take proposition, perhaps the only alternative is that facilities be provided which insure that all of us may enjoy a portion, rather than a few finding full enjoyment in our great out-doors.

The past has caught up with us. Poor logging, wholesale burning of 50 years ago and too much even today is now being felt full steam. The water isn't held in rivers and streams as it should be. Many stocked streams just won't keep their water, and trout cannot thrive in dried-up stream beds. Therefore, the lake clan is destined to grow.

Glacier Peak Wilderness

(*From page 27*)

tions which also have considerable potential for camping and picnicking, while at the same time adding a larger area that is primarily suited to wilderness enjoyment. The complete text of this 16-page statement can be secured from the Regional Forester, U. S. Forest Service, P.O. Box 4137, Portland 8, Oregon.

The statement reveals:

The Glacier Peak Area has been highly regarded for its scenic qualities for several decades. An initial plan in 1931 stressed retention in a natural condition of some 233,000 acres, with developments confined to a few well placed shelters plus foot and horse trails. Later an area of 794,440 acres was outlined for study but incontestable mineral values and highway plans reduced this to 347,525 acres in 1940. The present proposal to reclassify the previous limited use area to a wilderness covers 434,310 acres of which 79,291 acres support 3,277 million board feet of merchantable timber valued at $80 million.

The present study involved preparation of an accurate planimetric map from aerial photographs plus assembly of basic information about recreation, timber, grazing, soil, water, mineral and other resource values. By outlining each use on a transparent overlay and then superimposing the overlays on the base map over a light table, the portions requiring special study immediately become apparent.

Unusual scenic features, including glaciers which radiate in all directions from Glacier Peak, 30 other peaks above 8000 feet in elevation, mountain streams and lakes, plus an unusual contrast in timber types at lower elevations, make the region unusually attractive to photographers, hikers and botanists.

Commercial timber stands occupy 17% of the area assigned wilderness status, the balance being brush lands, open hillsides, meadows and glaciers. The timber stands are important recreationally. They also represent a monetary value to the federal and county governments, and by taking them out of multiple use production the economy of the local dependent communities is affected. For instance, Darrington is the principal dependent community adjacent to the Mt. Baker portion of the proposed wilderness preference area. It has three sawmills, one plywood plant, plus numerous shake mills, with a productive capacity of over 57 million board feet per year. The proposed wilderness area supports stands of timber which will produce a computed allowable annual cut of about 16 million board feet. This figure is used with the expectation that 1/3 of the commercial stand would not be harvested under present logging methods because of steepness of slopes and unstable soils.

According to Forest Service estimates there were 2875 visitors to the proposed wilderness area in 1956. In the aggregate, these figures represent ½ of 1 percent of the total number of recreation visitors to the national forests in which this wilderness is located. Another comparison shows that the area proposed for wilderness preference represents 12% of the total land area of the Mt. Baker and Wenatchee forests. Aside from the trails the only recreation improvement existing is a developed campground at Image Lake.

There are several mineralized zones within the proposed area, and some of the claims have been patented. In the Miners Ridge area 250 acres were patented in 1947. The Glacier Peak Mining Company is currently carrying on intensive diamond drilling operations on both patented and unpatented claims. Prospecting is active in all mineralized zones. Should it develop that mining values increase to the point that road access to the mines is needed, such access cannot be denied.

Principal game species in the area are mule deer, blacktail deer, and mountain goats. Deer range over the entire timbered and subalpine areas in the summers. In addition to the big game, predatory animals such as black bear, cougar, bobcat and lynx are found, as are furbearing animals such as marten, mink, fox and weasel.

Principal fish in the streams and lakes are rainbow, cutthroat, and Dolly Varden trout. Some of the west side streams are spawning grounds for salmon and steelhead trout.

The building of roads will not be permitted within the area, but this privilege is legally permissible for mining activities. The present trail system provides opportunities to visit the most important attractions in the area.

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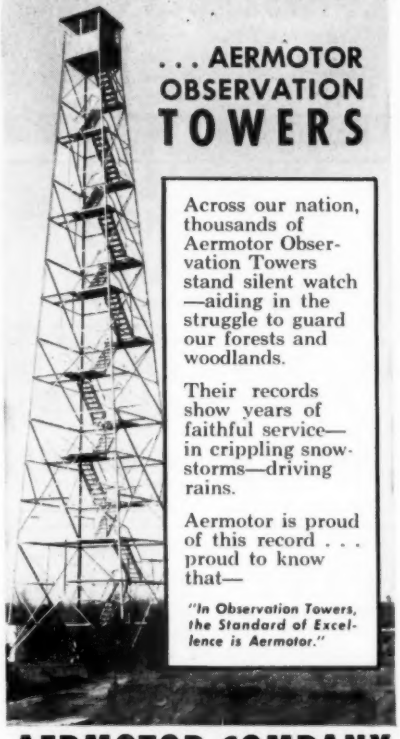

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Miners Ridge is the only permanent fire lookout station within the area. Additional detection is being furnished by airplane, and much of the fire suppression work will continue to be done by smoke-jumpers. Increased public use may make it necessary to develop additional fireman stations within the area.

The map on page 27 shows the area specifically proposed for wilderness use and the additions as well as deletions to the present limited area. Brief explanations follow:

A. Sauk

A number of people of Everett, who, through the years, have been the heavy users of the Glacier Peak country, have long advocated a road to the Cascade Divide at the headwaters of the Sauk River. They have felt more people would thus be enabled to view the spectacle of Glacier Peak and the surrounding rugged mountains, and to take short, easy hikes along the ridge tops. The proposed boundary has been drawn along the ridge between Sauk and Sloan Creek to allow room for this important recreation road.

B. Whitechuck River

Two major reasons are given for excluding Kennedy Hot Springs from the proposed area. The Whitechuck Basin has a high potential for the roadside recreationist, and with further development for camping, picnicking; and possibly a small resort catering to hikers, climbers, and fishermen, Kennedy Hot Springs would encourage greater use and appreciation of the wilderness area. Kennedy Springs, together with camp sites in the Suiattle drainage will accommodate an additional 20,000 recreational visitors per year, most of them will pass through the community of Darrington. The second reason is that the Whitechuck Basin has a large timber inventory and high production capacity. In 5,200 acres of 100% timber type between the boundaries of the limited area and proposed wilderness area, there is a volume of 235 million board feet of high quality timber.

C. Suiattle River

From the end of the Suiattle River Road it is 13 miles by trail to the top of Miners Ridge, representing a vertical climb of about 5000 feet. It is proposed to exclude the valley floor on the north side of the Suiattle River to a point about ½ mile above the mouth of Canyon Creek. This will place the scenic beauty of Glacier Peak within the enjoyment of the roadside recreationists.

D. Lyman Lake and Upper Chiwawa

Some of the outstanding attractions in the proposed wilderness area are Lyman Lake and Lyman Glacier in the Railroad Creek drainage. This is a highly mineralized zone; but recreation values are so important in this zone, and the possibility of making these values available to roadside recreationists is so limited that it is included in the area proposed for wilderness use.

E. Agness, Company and Devore Creeks

Road access part way up Agness Creek will increase roadside types of recreation use, and it will allow for the orderly harvesting of good quality timber stands in the valley floor.

F. Panther Creek-Napeequa River

Sizable portions of these drainages have been included in the area proposed for wilderness preference because wilderness values are dominant. Stringer stands of commercial timber are found in the Upper Panther Creek drainage, but the character of the soil and topography makes logging unfeasible.

G. Cascade Pass

The road terminals of the Stehekin and Cascade River roads lack 8 miles of being connected, yet afford a wonderful opportunity for resort guests and others to enjoy the scenery, fishing, and camping opportunities, and provide easier access to Cascade Pass for hikers. Trapper Lake is excluded from the wilderness preference area due to long use by fishermen who are landed by pontoon-equipped aircraft.

H. Illabot-Jordan Lakes

Commercial timber stands extend well up into the headwaters of Illabot, Jordan, Boulder, Found, and Kindy Creek drainages. In this section, timber harvesting is considered the preference use and will be done with due consideration of public needs for roadside and streamside recreation.

If a National Wilderness Preservation System had existed in 1931 in the form now proposed, it is likely that this specialized recreational area would have been frozen at its initial 233,000 acres, or at best, at the 1940 revision of 347,525 acres. But new maps and detailed resource information have indicated now that one-half billion board feet of timber can be made available to local industry in a way that will benefit automobile recreationists, while at the same time adding 57,000 acres to the area of wilderness.

Taming the Watershed

(*From page* 31)

gallons for a one-minute shower; 4 gallons for each flush of the toilet; and a heavy load for laundry, automatic dishwashers, air-conditioning equipment, garbage grinders, lawn sprinklers, etc.). Including industrial and agricultural consumption, our daily share jumps up tenfold.

Conservation of water, soil, or any other resource, does not mean hoarding but using wisely. And wise use presupposes some knowledge of the way nature supplies us with certain resources; this involves relationships which are often quite obscure.

For instance, the powerful kings of Mesopotamia had no idea that their herds of sheep, grazing in far-away mountains, had anything to do with the downfall of their huge agricultural empires. But as population grew, the mountain slopes were overgrazed and no longer could hold the soil which was washed down by the rains into the rivers Tigris and Euphrates. From there the silt went into the network of canals which irrigated the fields. Thousands of slaves labored to keep those life-giving canals from becoming choked, but in vain; the stoppage of the canals depopulated the villages and cities more effectively than the slaughter of people by an invading army.

Nor did wise King Solomon dream that his construction of the temple of Jerusalem would contribute heavily to the downfall of the "land of milk and honey." He ordered 150,000 lumberjacks to cut down the cedars of Lebanon and skid the logs to sea, to far-off Jerusalem. The mountains, thus deforested in a destructive fashion, caused the rain to run off, washed away the top soil, and turned a Garden of Eden into a desert.

The same sad story has been repeated over and over again—in the Near East, in Africa, in India, in China, in some parts of Europe—and it has taken a heavy toll of the virgin soil of the United States. According to the latest estimates, gullies have made one fourth of our crop land useless for cultivation; another fourth is seriously damaged, with about half the top soil washed away; one fourth is beginning to erode; and only the last fourth is still in prime condition.

The soil that is being washed away, not only is lost from where it is needed; but much of it is also deposited where it is harmful: in our rivers, harbors, lakes, canals, reservoirs—and often on our highways and in our very homes when a flood takes it there. The total average damage from floods and sediments in the United States is estimated at slightly more than one billion dollars a year.

The idea that something had to be done in the mountains to protect the valleys is, of course, not new. The Prince of Venice, concerned about floods which overwhelmed his lagoons and filled them with "large quantities of trash and mud," received a report in 1608 blaming the deforestation of the mountains. The Prince, however, in spite of his power, could do little. He could not prevent the shepherds from letting their animals graze at the wrong time of the year, because no one was aware that there was a wrong time for grazing. It wasn't until our century that systematic experiments and observations gave some indications as to what practices in the watersheds would save soil and water.

As painstaking research accumulates information, we are becoming aware that watershed management is a complicated business requiring the cooperation of many and varied people. Even the term "watershed" has changed its meaning during the past 30 years. No longer does it mean primarily the entire huge drainage divide that separates the water flowing into different rivers or oceans. The concept of the watershed has been narrowed down and made more manageable. It now implies a drainage area that may contain from a few acres to several hundred thousand acres, from which water drains toward a single channel. A large river basin may embrace many thousands of watersheds, and each of them is recognized as an existing or potential focus of a community of interests among the residents.

This concept has been emerging only very recently. During the thirties a number of laws were passed to provide the organizations and funds for soil and water conservation; among those were the Soil Conservation Act, the Flood Control Act, and legislation establishing the Tennessee Valley Authority. The primary interest of such federal and state laws was directed to planning for the resources of major river basins. These basins proved suitable planning units for such interrelated

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projects as mainstream navigation and multiple-purpose dams for power, flood control, and irrigation. It became increasingly obvious that they could not get into the details of accomplishing water and soil conservation practices on thousands of individual farms, ranches, and forest holdings.

We now have recognized that the "small" watershed is the primary unit for the development of plenty of clean water. Since 1945 about 1,000 watershed groups have been formed throughout the country.

W. C. Lowdermilk, a leader of international renown in the field of watershed management, reports on the man who found gold on California grain land. His mighty dredges turned the land upside down and left rows of boulders which will not weather into soil for a million years. "What kind of economy is this?" Lowdermilk asks angrily. "Exploitation has ruined these lands forever. Such a procedure can not be pursued far throughout the country; for what shall it profit a nation if it gains the whole world of gold and loses its soil?"

Fortunately such costly blunders become rarer as information on their possible consequences becomes better known. Recently, another California farmer in a similar situation stockpiled his soil before it was dredged, and had the soil put back after the gold had been taken from the land.

A group of researchers, still far too few but increasing in number, have produced some concrete figures that reveal the scope of the watershed management problem. The figures do not always correspond because depletion and conservation vary with climate, type of soil, and other conditions; but they indicate the direction of good management.

Here are just a few examples: At Statesville, North Carolina, scientists measured soil erosion caused by surface wash. The tests showed the tremendous preserving power of forest cover. Under natural forest cover soil was formed faster than it could be washed away, and the erosion rate was 7 inches in 300,000 years. After the forests were replaced by soil depleting crops, the 7-inch topsoil was washed away in 44 years.

Experiments all over the world confirmed that, under most conditions, a watershed covered with forests will hold more water and erode more slowly than one partly covered with fields and pastures; and that grass will hold water and soil better in place than grain or field crops.

Grazing, the downfall of many mighty empires, can be kept harmless to soil and water resources if done with an understanding of its consequences. Such an understanding is available as the result of numerous tests and observations.

Road building is sometimes responsible for soil erosion in watersheds which otherwise are in good condition. For instance, in two winters 80,000 cubic yards of sand and gravel were deposited in Pine Canyon reservoir near Pasadena, in southern California. This erosion debris came from the overcast slopes of a new road passing the reservoir about two miles up the mountain. Watershed management researchers have shown how to make road building safe by improving drainage, and strengthening the slopes mechanically against surface runoff and sliding, and by establishing a ground cover of grass, shrubs, or trees.

Fire, of course, has been the cause of obvious damage for thousands of years. But it took modern observation to make people realize what a fire in the watershed actually means in terms of water and soil losses.

While everyone agrees that wildfires must be prevented, opinions are not unanimous about the effects of controlled burning which sometimes is used to clear an area of brush prior to reseeding, or to reduce the threat of wildfire.

In this subject, as in any other of this kind, early research is rather apt to show divergent results. This is an indication of the complexity of the problems encountered, and points clearly to the need for additional research—research not on reactions in laboratories but on natural processes in the hills and mountains where cycles of climate, soil, slope, cover, and other natural phenomena have to be studied.

Such studies have already yielded substantial results. As one scientist put it, "We're getting out of the scare stage." No longer do we need to picture the horrible consequences of land abuse in order to frighten people into using conservation measures; we now can advise them as to practices which research has shown will succeed.

We know, in certain areas and under certain conditions, how many animals can graze safely and at what season; how much timber can be cut to release rain and snow water for sufficient and clean streamflow; how mountain roads should be planned and built to avoid erosion losses. The effect of poisonous fumes on our soil and water resources is another subject which has been studied in the past, but may well receive more attention in our smog-conscious present.

An example of this type of early research and also of awakening public awareness is an investigation carried out in the area of the present Shasta Dam. Here, early this century, three copper smelters by their poisonous fumes killed forests, and prevented natural reseeding. As a result the winter rains in 17 years took off an estimated 35 million cubic yards of soil. Experimental plantings made in the area showed that, contrary to popular opinion, the soil was not poisoned and the area could be reforested.

Yet, we cannot pat ourselves on the back for knowing more about soil erosion than wise King Solomon. We have barely begun to establish the underlying principles of good watershed management.

A recent nationwide survey revealed that 17 out of the 26 accredited forestry schools, and one out of the seven non-accredited schools teach one or more courses in forest influences, forest hydrology, or watershed management.

Most of the schools which offer courses in watershed management have started them during the past 10 years. The first to give work in forest influences was the University of California in 1932. The Utah State Agricultural College followed in 1935, but it wasn't until 1947 that other schools established similar courses. California's pioneering was mostly due to the work of Professor Joseph Kittredge, Jr., for a quarter of a century a professor of forestry on the Berkeley campus. He is the author of the definitive textbook on forest influences on water and soil.

One of Kittredge's students, Edward A. Colman, later became the head of the Division of Forest Influences Research of the California Forest and Range Experiment Station, U. S. Forest Service. Stationed on the Berkeley Campus of the university, he devoted his entire life to the problems of watershed management and wrote the standard work, "Vegetation and Watershed Management," an appraisal of vegetation management in relation to water supply, flood control, and soil erosion. Colman was one of the very few men in the country with an overall training and understanding in watershed management. His early death last year left a gap that was

almost impossible to fill because of the lack in trained personnel. As a fitting memorial his friends set up the Colman Watershed Fellowship Fund which the Regents of the University of California have agreed to administer and for which they are accepting donations. The fund is to help train graduate students in the field of watershed management.

If you wish to help "tame the watersheds" send contributions to the Colman Watershed Fellowship Fund, School of Forestry, 243 Mulford Hall, University of California, Berkeley 4, California. Make checks payable to the Regents of the University of California.

Morning of the Laundered Wind

(*From page 32*)

keep out the sun. This smog has caused the death of many people before it moved away. Smog is an impure wind! We have to breathe if we live! Therefore, we have to breathe smog if it descends upon us.

Then there are the dangers of exploding atomic and hydrogen bombs. There is the danger of radioactive dust. All of these great dangers are yet to come. So our air with the advance of civilization and with more people, contains more impurities. If one could go back far enough when there were fewer people in the world, he would find the air pure and rivers much cleaner too!

Now the rivers are filled with impurities and air we breathe is becoming as impure as our rivers. When we get more people and make more new discoveries (of destruction), then, we can expect more to happen to the air we breathe. We are the food we eat. We are the air we breathe. What we eat and the air we breathe have much to do with our thinking.

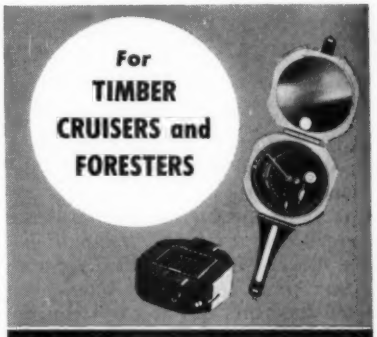
Not twenty miles away in an industrial area where pupils live in a milltown, where day and night a pillar of smoke hangs over the city, the pupils have never done well in school. Children from the nationalities of people in nearby towns where there isn't as much smoke, have done better in school. I have often wondered in fact, I am quite sure, that this smoke from these furnaces has affected the thinking of children and their parents.

Our fight to clean our rivers of filth, to make them as God intended them to be, is something everybody should help do. Our rivers should not be arteries of impurities the length and breadth of our country. It has always seemed strange to me to have one intake pipe drawing water from the river to a reservoir to be purified with chemicals for human consumption while, in this same river, not too far from this in-take pipe, is an out-go pipe carrying human refuse from sewer lines. We have made progress, at least by legislation, to clean our rivers.

Unthought of by many, but there is another great progress toward cleaning our air, something that will help cleanse the continuous streams of obnoxious gases that pollute it. Everywhere over America, especially in Kentucky, we are becoming sensible enough to conserve our soil. We are setting young trees back where timber should not have been destroyed in the first place. The roots of these trees will go down into the soil to hold it in place. The soil will soften and rain can soak down instead of dashing over the hard-packed ground flooding streams and rivers. These are things the roots of these trees will do. But the top of these trees will have a greater duty to perform.

Walk early on a spring morning after the trees have leafed, and a rain has fallen. Breathe deeply of an air washed clean and seemingly purified. It is true that leaves on our oaks and poplars and other trees and the needles on our pines serve as filters to clean the impurities from the wind that blows over our earth. If the leaves on the trees and needles on the pines have been moistened by rain or dew, the wind is washed cleaner. Since our state recommends pine seedlings, several species, our air to breathe will be given a more pleasant aroma. Breathe the wind from pines on a morning of heavy dew or after a rain! This very wind will invigorate you! While we conserve our soil to keep it from washing away, and prevent floods by our conservation, we are also establishing the greatest filters in the world to purify the very air we breathe.

Someday, all over America thinking people will be seeking clean isolated areas like W-Hollow. And I hope people will find them. It is a pleasure to live where the air is clean, water is unpolluted, soil is fertile, and trees and wildflowers grow in abundance and give beauty to the land.



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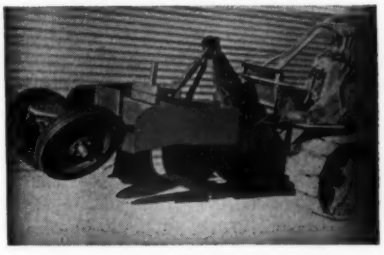

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Making a Watershed Work

(*From page* 21)

the Brandywine Valley Association has done and the publicity it has given to all these industries that operate along the Brandywine has done a great deal to *bring the problem into focus.* My general feeling with respect to it could well have been stated the other day at a board meeting of the association when the problem of stream pollution came up regarding another paper company. I made the remark that I didn't see why it should be a problem because we were dealing with the same materials and having no trouble removing them. One of the other directors then made the observation, 'Well, that's fairly simple because you *want* to get it out.'

"Brandywine Valley is one of the principal causes for our wanting to get it out," Mr. McIlvain continued. "At the present time we have a substantial primary treatment plant in which we are removing by sedimentation substantially all the suspended solids in the water. However, we are going to be faced with and realize that within the matter of a very few years we are going to have to build a secondary treatment plant which will remove a substantial amount of the oxidizable dissolved solids from the water. At the present time frankly we don't know how we are going to do it. We are operating and have operated a pilot plant for two summers now with relatively little success in an attempt to use a sludge process to remove and dissolve this material. A large number of mechanical difficulties plus a rather poor selection of the site, I think, have interfered with the operation of the pilot plant. Anyhow we moved it, and this year it is going to be located right beside the laboratory where it will get very close attention.

"However, I think those that are interested in that must recognize the fact that we are part of an industry that covers the whole United States. We are located in Pennsylvania. We have many competitors, however, in other states where stream pollution has not been brought into focus as here. We have been advised that the secondary treatment plant that we are concerned with will cost us certainly no less than a quarter of a million dollars. The removal of that amount of money plus the operating expenses of the treatment plant will have some effect on our competitive position, *unless the rest of the industry is in the same boat at the same time.* So I think we can principally hope that this development as it comes along will find the whole paper industry putting forth the same effort and I rather expect the industry's own association, the National Council for Stream Improvement, will do a great deal to help further that objective."

Q—We thank you for sending us your articles on the Muskingum and Brandywine programs. I am led to believe that in some cases cooperation between the county agent and the SCS leaves much to be desired. Can you shed any light on this?

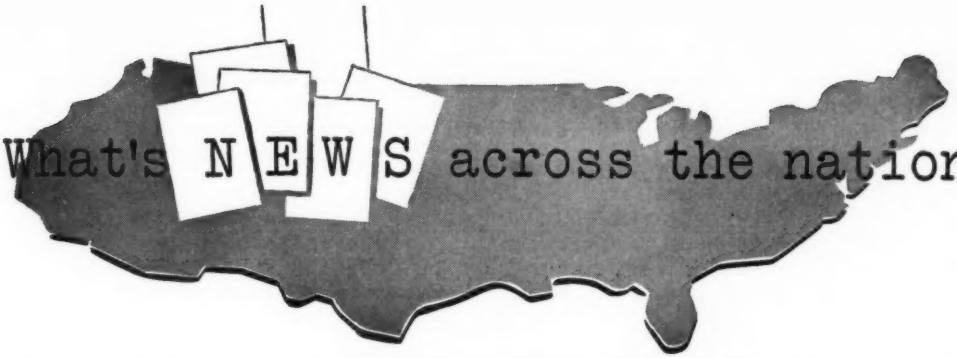
A—When we visited the Brandywine project something less than a decade ago, the attitude of the county agents was not positive regarding this project and in some cases was negative. Perhaps it wasn't a fair question, but we know that Howard Busch, of the SCS, and a stalwart in the pioneering phases of the Brandywine program, would give us an honest answer on this. "The cooperation is much better," he told us. "There's more than enough for us all to do," he continued in pointing to the fact that 800 of the 1600 farms in 330 square mile watershed have now been brought under SCS farm plans. (The average for the nation is possibly somewhere around 20 percent.) County Agent Bob Powers, who joined the workshop group on a tour of the watershed, proved to be personable, young and energetic. He contributed much to the success of the tour. Control of both crop and tree diseases proved to be one of his special interests. We got the impression he and Busch made a good team. Another angle on this particular question that might prove helpful elsewhere, is the fact that Mr. Hoff had some members named to his board who are interested and active in *both* the work of the county agents and the SCS. The Administration has helped too, some experts think. It demanded greater "teamwork" on the part of these various agencies.

Q—. . . Apparently it has been done. So, on the basis of past experience, how is the best way to cooperate with the Army Engineers and still make your point at the same time?

A—As Dr. Maurice Goddard, Secretary of Forests and Waters in Pennsylvania, told the workshop, "Conservationists are always fighting the engineers, but we've got to remember they have some of the best brains in country." Also, we might as well accept the fact that they like to build dams and are going to build as many of them as possible. This means, according to many watershed experts, that local people should have some say as to *where* those dams go, as to whose farms or forests are innundated, and what the recreational potential of any given project may be. This means that 1) local groups must have their own plan, and 2) they've got to stick together. In the Muskingum Valley, the engineers were determined to build one big dam on the main stream thereby innundating many valuable acres. The people stuck to their plan to build a series of smaller dams on the tributaries. And that was what was done. Right now, the engineers are studying the Delaware River Valley. In this connection it was interesting to note that Col. Allen F. Clark, Jr., District Engineer, stressed the fact before the workshop that he wanted to see an overall citizens' association for the whole Delaware comparable to the Brandywine Association. This sounds hopeful. At the same time, one recalls that Col. Clark's predecessor, in calling in interested groups, started off by telling them "*We* are going to do this and *we* are going to do that." Whereupon one enterprising citizen got to his feet and asked, "Just who do you mean by *WE?*" That got the business off to a good start. Like most conservation organizations, we have received many nasty letters about the tactics of the Army Engineers. Many of them come from people who have not been alert to what is going on until it is too late. The moral here should be clear. Have your own plan of action. Stick to it. Have one or two highly-placed people ready to go to bat for you. In this connection, there probably has never been anyone who could unscramble engineer jargon more quickly than the late Senator Taft of Ohio. People like that can help plenty.

Q—On the basis of recent reports I have read, including those in your magazine, it seems to me that forestry is not getting the attention it so justly deserves in watershed devel-

(*Turn to page* 70)



A HALF CENTURY OF PROFESSIONAL FORESTRY EDUCATION IN PENNSYLVANIA was celebrated May 27-28 at the School of Forestry, of the Pennsylvania State University. Over 500 forestry alumni and friends of forestry participated in the two-day recognition ceremonies, with alumni journeying from as far away as Alaska and Hawaii to the campus at University Park (State College, Pa., once described by an early college president as "being located in the center of the state and equally inaccessible from all points"). Starting as a department of forestry in the School of Agriculture in 1907, with Dr. Hugh P. Baker as its head, the small faculty and student body have grown to School-of-Forestry status (1954). Dr. Baker had previously organized the forestry curriculum at Iowa State College; he remained at Penn State until 1912 when he went on to the New York State College of Forestry at Syracuse to become its first dean.

PRINCIPAL CENTER OF ATTRACTION, despite the modern forestry building, laboratories and experimental forests, and the many illustrious alumni and visitors present, was Professor John Arden Ferguson who came to the department as an instructor in 1908 and who, from 1913 until his retirement in 1937, headed the department. Now in his mid-eighties, "Fergie" was on hand for all the event-packed celebration to greet and to reminisce with his boys.

ARRANGED BY THE PENN STATE-MONT ALTO FORESTRY ALUMNI ASSOCIATION, the Golden Anniversary brought together the history and the alumni of what had once been two separate institutions—Penn State and the old Pennsylvania State Forestry School, founded in 1903 as the "State Forest Academy" to train foresters for state service. The two schools were combined in 1929; and the Mont Alto plant, the site of the state school, is now used for freshmen training. General chairman of the 50th Anniversary Committee was O. E. Ehrhart, Class of 1913, president of Armstrong Forest Company. D. E. Hess, '35, vice president of the Glatfelter Pulp Wood Company, and president of the alumni group presided at the first-day session; and Marlin H. Bruner, '31, forester for Clemson College, and an alumnus who bridged the two schools, having started at the Mont Alto institution prior to the merger and having completed his course at Penn State, was toastmaster at the banquet.

WHILE THE PROGRAM WAS DESIGNED TO TAKE A LOOK AT THE PAST HALF CENTURY, with the many contributions of alumni high-lighted by a team of "historians," the forward look was conspicuously evident. James K. Vessey, '25, assistant regional forester, U. S. Forest Service, Milwaukee, told of the work of the alumni in federal service. Charles H. Flory, '20, state forester of South Carolina, recounted the development of state forestry over the past 50 years and the part that alumni played in the development. William C. Bramble, '29, acting director of the School of Forestry, discussed the contributions of the alumni in education and letters. Albert G. Hall, '33, forestry relations counsel, showed how the advancement of private forestry was influenced by Penn State-Mont Alto men. The present and future of forestry at Penn State, and especially the need for changing concepts and approaches, was developed by Dr. Eric A. Walker, president of the university, and by M. K. Goddard, Secretary, Pennsylvania Department of Forests and Waters, and director (on leave to serve the state) of the School of Forestry.

HISTORICAL HIGH-LIGHTS OF THE PENN STATE AND MONT ALTO FORESTRY SCHOOLS, an address by Henry Clepper, '21, executive secretary, Society of American Foresters, traced the beginnings of forestry in Pennsylvania from 1873 to the present, as developed in the 50th Anniversary book, "Forestry Education in Pennsylvania," which he compiled and edited for the alumni association.

(Turn to next page)

OF THE 2,069 PENN STATE-MONT ALTO GRADUATES, there was one group of foresters whose absence was given solemn recognition. These were the men who gave their lives for their country in World Wars I and II. In an impressive ceremony, a grove of memorial trees was dedicated to the 55 war casualties. Invocation was given by the Rev. E. Lee Brehm, '38; and the dedicatory address was delivered by Col. Herman Worl, '10.

PRINCIPAL ADDRESS WAS DELIVERED BY THE GOVERNOR OF PENNSYLVANIA, George M. Leader, who stressed the importance of forests to the state's welfare and the need for bringing new, permanent forest industries to areas of surplus labor in which the past 50 years of forestry application has now made available a dependable timber supply.

ESPECIALLY HONORED AT THE BANQUET WERE A GROUP OF ALUMNI who individually had made outstanding contributions to forestry progress and to the development of the Forestry School. Awards were presented by the university's president, Eric A. Walker, to Henry Clepper, '21; Frank C. Craighead, '12; George W. Dean, '26; George L. Drake, '12; Edmund O. Ehrhart, '13; Irvine T. Haig, '23; B. Frank Heintzleman, '07; Earl W. Loveridge, '12; Arthur C. McIntyre, '29; Carl A. Rishell, '23, and Herman Work, '10.

FIELD TRIPS TO EXPERIMENTAL PLOTS on the university farm woodlands and to the 4500-acre Stone Valley Experimental Forest were indicative of the advancement in forestry and forestry thinking since the founding of the school. The latter area has served since 1940 for research and instructional purposes for the study by the embryo foresters of wildland management. It is also used by trainees in wildlife management and by engineers, and by the College of Physical Education and Athletics for instruction in outdoor recreation. On the drawing boards for this area is a proposed lake development which will combine forest hydrology and additional opportunities for study and enjoyment of recreational developments.

Making a Watershed Work

(*From page* 68)

opment programs and meetings. Is this true?

A—It is certainly not true in the Muskingum Valley and it is certainly not true in the Brandywine. And these are the two outstanding projects of their kind in the nation. The Brandywine's cooperative sawmill—Woodland Products, Inc.—is now putting the finishing touches on a $200,000 addition. Manager Fred Coates is turning out almost a million and a half feet of lumber a year, most of it hardwoods. Of course, as County Agent Bob Powers points out a lot of his "forestry" calls are of the "please save the maple on my lawn" variety. But every lawn maple saved can be a direct path into that farmer's woodlot. Howard Busch and his SCS crew have always utilized forestry opportunities in farm plans, especially as regards marginal, hilly land where erosion is a problem. We wish you could see the rows upon rows of "living fence" in the Brandywine Valley of multiflora rose which are things of beauty as well as fine cover for wildlife. Also, we in forestry should be cautious today in demanding too much for forestry when it might not be in the best interest of a valley as a whole. All of us have got to look at this thing more as an integrated unit where *all* conservation activity makes a complete pattern. As to forestry neglect at meetings, foresters might take a leaf from the notebook of Miss Eleanor E. Hanlon, of Syracuse, at last year's Watershed Congress. First, she went. Secondly, she arose from her chair and stoutly declared there is more to conservation in this country than just conserving soil and water, important as those things are. One sure way to cure neglect is to pitch in and do something about it.

Q—What is the real secret of success, the real motivating force, in such watershed programs as that of the Brandywine Valley Association and others? We want to start action too but catching the interest of the public seems to be most difficult.

A—It's all done with mirrors, really. Remember when your English teacher told you that a good book holds the mirror up to life? Well, that's what Mr. Hoff and his cohorts have done in the valley only they did it with pictures as well as words. Everyone knew that the Brandywine was polluted and everyone knew that erosion was rife. But these things had to be pinpointed and people had to be shown that these abuses added up to economic, recreational and spiritual losses for *everybody* including city and rural folk alike. Accordingly, Hoff's organization photographed every open sewer, every example of sheet and gully erosion, signs stating "No swimming allowed here—polluted," and every mangled forest. Then they invaded homes, meetings, factories, schools and even the State Legislature with slide projectors. And they held the mirror up to the bad things in their valley. Did you ever see a real sharp closeup of an open sewer and the things in it? It's a real shock, believe us and in fact Mr. Hoff almost turned the stomachs of the Delaware Legislature—but he got what he wanted. The Brandywine Association didn't threaten or bully. They merely presented facts and asked "how can we help?" And it proved impossible for factory managers to sit quietly and watch the sludge pouring out of their factories into the river and not

do something about it. It proved impossible for farmers to sit quietly and have his neighbor call out, "Hey Bill, isn't that erosion shot the one in your back pasture?" Today, over 10 years later, you can scarcely find a good erosion picture in the Brandywine Valley. You can't find an open sewer to photograph. As President Everette Henderson told the workshop, "Here's the accomplishment scoreboard:" 96 percent of industrial waste now purified; 94 percent of sewage waste now treated; a 60 percent reduction of silt discharge and a 30 percent reduction in rainfall runoff. Twenty-one miles of living fence have been planted. Thirteen-and-a-half miles of diversion terrace constructed. One-and-a-half million trees have been planted. A total of 20,000 Brandywine farm acres are now contoured and terraced. Eighteen thousand acres have been converted to grassland. Twenty-two hundred acres of woodlot have been thinned and otherwise improved. A total of 175 farms have farm ponds. Two conservation workshops for teachers are conducted each year. An annual rail ramble of the valley is a highlight. A continuing stream of visitors from everywhere take monthly and even weekly bus tours of the valley to see what has been done.

What the citizens in the Brandywine have done, others can do too. Moreover, they are doing it. The watershed association is taking hold more and more in the country. Today, we have more and more young men setting up similar programs around the country. There's Mendenhall in Illinois. There's Dave Unger running his Upper Susquehanna Watershed Association in Norwich, New York, who was only recently persuaded by Agriculture Secretary Henning, of Pennsylvania, to tackle an even bigger job for him. There's Malcolm Crooks and his Mill-Stone Stoneybrook Watershed Association at Princeton, New Jersey. There's Elmer R. Foster who actually faces the task of setting up 26 valley associations on tributaries of the 12,000 square mile Connecticut River Watershed. And many others.

All these people are marching ahead in the belief that a "watershed program to be successful should deal with *all* problems and *all* natural resources; be administered by representatives from *all* interests; secure assistance of *all* local, state and federal agencies, and be directed toward providing the maximum benefit to *all* interests."

TRAIL RIDERS OF THE WILDERNESS

Beauty and grandeur of inaccessible places always impresses riders

There is still time to join the Trail Riders for that trip of adventure in the Western wilderness this summer . . . ride the narrow trails in the rugged back country of our national forests . . . fish in lakes and streams . . . climb the mountains or hike around the lake . . . enjoy the companionship of fellow riders . . . relax before the evening campfire . . . sleep soundly under a canopy of stars. You will be thrilled with the rugged grandeur and beauty of high mountain ranges, deep valleys and canyons, flower-covered meadows. A memorable experience awaits you on one of these expeditions:

FLATHEAD-SUN RIVER WILDERNESS, MONTANA
July 5 to July 16; July 16 to July 27
$220 from Missoula
Parties limited to 25

HIGH UINTAS WILDERNESS, UTAH
July 15 to July 25
$230 from Vernal, Utah
Party limited to 20

SAWTOOTH WILDERNESS, IDAHO
July 30 to Aug. 9; Aug. 13 to Aug. 23
$225 from Sun Valley
Parties limited to 25

WIND RIVER MOUNTAINS, WYOMING
August 5 to August 16
$250 from Pinedale, Wyoming
Party limited to 20

GLACIER PEAK-LAKE CHELAN, WASHINGTON
August 5 to August 16
$225 from Wenatchee, Washington
Party limited to 25

EAGLE CAP WILDERNESS, OREGON
August 20 to August 31
$225 from La Grande, Oregon
Party limited to 25

SAN JUAN WILDERNESS, COLORADO
Aug. 20 to Aug. 30; Sept. 2 to Sept. 12
$230 from Durango
Parties limited to 25

PECOS WILDERNESS, NEW MEXICO
September 9 to September 20
$225 from Santa Fe
Party limited to 25

Registration on the following expeditions is closed, but in the event of an emergency cancellation it may be possible for you to take up the reservation. If you are interested in joining one of these groups, we suggest you let us know and we will do everything we can to make the trip possible for you:

QUETICO-SUPERIOR WILDERNESS, MINNESOTA (Canoe trip)
July 15 to July 24

WIND RIVER MOUNTAINS, WYOMING
July 15 to July 26

MAROON BELLS-SNOWMASS WILDERNESS, COLORADO
July 29 to August 8; August 9 to August 19

Write or wire for detailed information, itineraries, and reservations.

THE AMERICAN FORESTRY ASSOCIATION

919 Seventeenth Street, N.W. Washington 6, D. C.

Feature Photo of the Month

Photos used on this page will be of unusual rather than esthetic qualities and subject matter will be restricted to scenes, events, objects or persons related to the use, enjoyment or unique aspects of our renewable natural resources. For each picture selected AMERICAN FORESTS *will pay $10*

Troy Rodlun, AFA membership specialist (left) won this "Smokey" teddy bear at last month's AFA picnic but Robby Craig (below) took it home with him. As Vince Finnigan's photo clearly shows, Smokey's appeal is not limited to children by any means. That's Mrs. Axel H. Oxholm, wife of the late great forester and timber utilization expert, at the right David Craig and Mrs. Jane Evans in background, Gene Wright in foreground. The replica of Smokey was kindly provided by Bill Huber, of the Forest Service

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6 Horsepower "Power Twins"

Take your pick! One of these two new Homelite Power Twins will do your woodcutting jobs faster, easier, more profitably.

Here's power . . . 6 full, hard-hitting horsepower . . . to make even the toughest cutting jobs a cinch. *Here's light weight* . . . the lightest 6 horsepower chain saws in the world — for easier handling and more production with less effort. *Here's low-cost dependable operation.* Homelite's new short-stroke, high-compression engine minimizes wear and assures less down time, lower maintenance costs, longer chain saw life. Both "Power Twins" cut left, right, up, down, upside down to handle any type of job. Try *each* of the "Power Twins" and choose the one that's right for you.

6 Horsepower 22 Pounds

GEAR DRIVE

6 22

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More Profitable Cutting. This smooth-operating Homelite brings down time *down*. You get longer engine life, spend less time out-of-the-woods for maintenance and repairs . . . less time refueling the big new gas tank. You cut more efficiently for more profitable cutting.

Money-Saving Attachments. The Homelite 6-22 is the newest one man chain saw that has plunge-cut bow, brush cutter, and clearing attachments available. You can make a quick switch and be ready in seconds for any type of cutting.

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6 Horsepower 19 Pounds

DIRECT DRIVE

EZ 6

Easiest Handling. The EZ-6 weighs only 19 pounds — with every ounce perfectly balanced. Built for rugged professional use, this fast cutting 6 horsepower chain saw is extremely easy to handle — even an amateur can operate it with little strain or effort.

Fastest Cutting. This direct drive chain saw, with its fast chain speed and light weight, makes quick work of trees up to 5 feet in diameter. Packed with 6 full horsepower, it cuts 8" oak in 4 seconds, 18" pine in 12 seconds.

A Profitable Investment. The low-cost EZ-6 starts to pay for itself the first time you use it. Turns woodlots into big cash crops . . . cuts timber, pulpwood, fence posts, cordwood. This high speed direct drive chain saw has enough dependable power to make either full or part-time cutting profitable.

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Cuts 18" softwood in 12 seconds
Fells trees up to 5 feet in diameter

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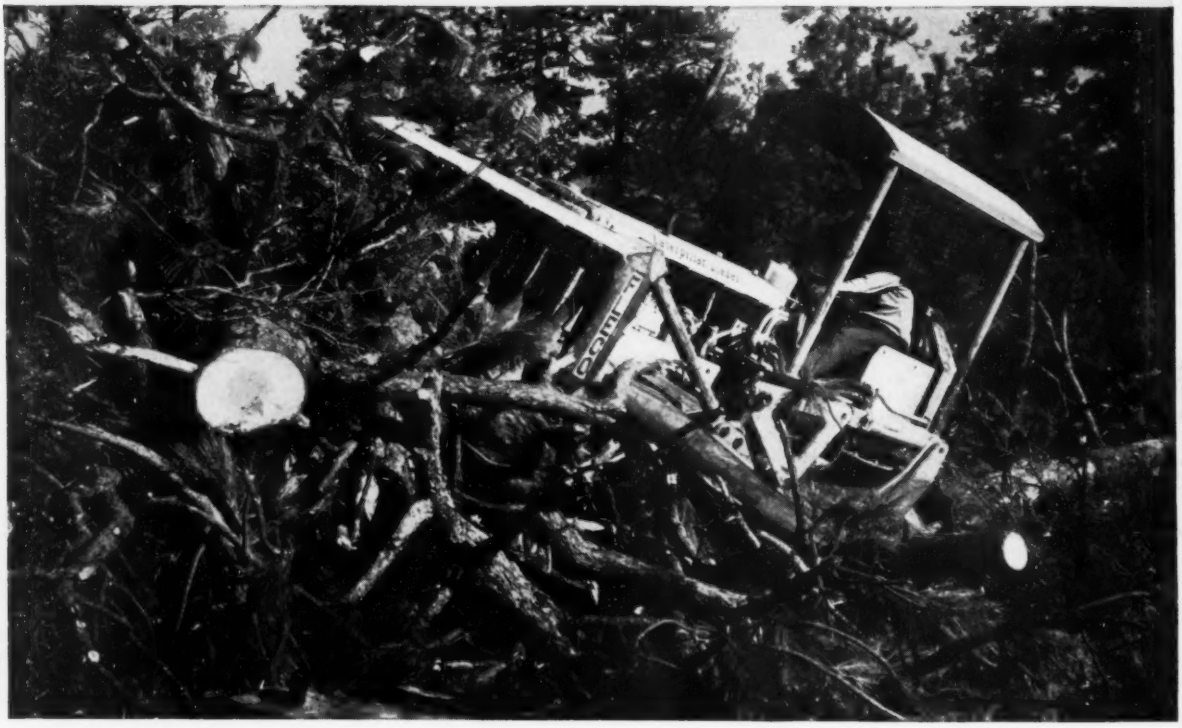

The White Swan Lumber Co., White Swan, Washington, uses this CAT* D4 Tractor with Fleco Root Rake in its selective logging operation on the Yakima Indian Reservation. The D4 piles slash from a daily cut of 50,000 bd. ft. It works an 8-hour day, 5 days a week. The company bought it for several reasons. Among them: the excellent reputation of the nearby Caterpillar Dealer for service and the excellent reputation of Caterpillar-built equipment for dependable performance under difficult conditions. Robert Turner, White Swan's superintendent, says: "We're very well satisfied with our D4."

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